THE INDIAN HILL-STATION: KODAIKANAL

18 JUN 1972

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CHAPTER I

INTRODUCTION

The Indian hill-station is a high-altitude settlement originally established by the British in India to serve the needs of British civil servants and soldiers of the East India Company. It has undergone considerable functional evolution so that it now serves an almost entirely Indian clientele. This evolution may be regarded from three different viewpoints. From the standpoint of cultural ecology, the hill-station once functioned as part of a British colonial ecosystem. Because of its cool temperatures, and its embodiment of an upper-class British life-style, the British perceived it as a necessity for living in India. Since Independence, however, it has become an integral part of an indigenous ecosystem. Secondly, the hill-station may be regarded from the viewpoint of settlement geography. From a very small center with a single-purpose function as health sanatorium, it has developed into a multi-functional type of settlement with a series of inter-related activities with overlapping hinterlands. Thirdly, the changing functions of the hill-stations also represent a process which may be designated "Indianization." Since Independence the hill-stations have not only become predominantly populated by Indians, but they have continued to develop in such a manner that Indianization may be regarded as one aspect of a complex larger process often referred to as *modernization*.[1] At the hill-station this involves improved transportation systems resultant in greater accessibility, increased urbanization, increasing specialization utilizing climatic differences inherent in altitude (both in agriculture and industry), and growth of education with the persistence of English-medium schools.[2]

The Hill-Station Heritage

The tropical hill-station looks back to an ancient heritage. It involves seasonal movement to the hills and such seasonal movement has been a widespread practice, by no means limited to the tropics. It often involved livelihood patterns in the form of transhumance which is still important in upland areas of Asia, Africa, and Europe. That this way of life was once more common than it is today is suggested by the general use of dual name systems throughout Mediterranean lands. Many villages have a lower section in the plains which most frequently, though not always, was the permanent residence of the villagers, and an upper section in the hills sometimes as far as six hours' trek away.[1] Transhumance is also widely practised in India and many of the present hill-stations were once used only by shepherds.

---

[1] See for example: Myron Weiner, ed., *Modernization: The Dynamics of Growth*, Voice of America Forum Lectures (Washington: U.S. Information Agency, 1966).

[2] Though this study does not set out to deal with modernization, the changes of hill-station functions since Independence are clearly one aspect of the larger modernization process.

There were also frequent movements into the hills involving religion, as temples were preferably built on hills. Such religious movements, as pilgrimages in India today, were often seasonal, connected with harvest or dry-season activities such as weddings.

This vertical movement was frequently associated with health; in connection with healing which in early days was associated with religious cults and rites performed in temples;[2] with the gathering of medicinal herbs which grew on the hill-sides; or with malaria, a predominant summer scourge of poorly-drained lowlands. It also involved comfort and recreation, especially for the rich who could afford summer villas in the cooler hills. Ancient Latin possessed a verb aestivare, meaning "to spend or pass the summer in a place [often in a summer villa in the mountains]."[3] Not only has seasonal movement to the hills taken place throughout time, but hill resorts are distributed throughout the world--in tropical and non-tropical Latin America, in the Mediterranean as well as tropical Africa, western as well as southern and southeastern Asia, as indigenous as well as foreign settlements. Nevertheless, the tropical hill-station as defined in this dissertation, is a comparatively recent phenomenon, representing an expansion of colonialism in the tropics. According to Spencer and Thomas, the hill-station "developed during the nineteenth century by the British and Dutch colonial masters in order to make sojourns in a foreign land less uncomfortable."[1] In colonies of both countries, hill-stations developed in a similar manner, originally as health sanatoria and later becoming seasonal vacation centers, the Dutch stations in the Netherlands Indies somewhat earlier than the British ones in India, and with less emphasis on seasonality as the hill-stations in the Dutch East Indies tended to become sites of permanent residence for Dutch families. From its origins in India and the Netherlands Indies, where its early start was still reflected a century later in a considerably higher proportion of hill-stations than elsewhere, "gradually, and later, and with significant differences, the health resort has spread over the Orient."[2] Colonial societies thus set up the norms out of which the tropical hill-station developed.

---

[1] Nouhákēs lists such sets of villages in all major political regions of Greece, showing a variety of terminology which implies seasonal migration, for example: Ánō (Upper) Mamoula and Kátō (Lower) Mámoula, in the eparchy Khalkídos; Kátō Panta and Apánō (Upper) Pánta, in Corfu; Ánō Epídavros and Palaià (Ancient) Epídavros, near the site of the ancient theater; Dolianá and Kalývia (Seasonal Shelters) Dolianṓn, in Kynourías; Kámpos and Epánō (Upper) Kámpos, on the island of Íos in the Aegean. See: Iōánnēs Emm. Nouhákēs, Ellēniké Hōrografía (Athens: Sp. Kousoulinos, 1901).

Similar examples can be found in all countries of Southeastern Europe. In Romania where a fairly complete toponymy is available, more than 300 such pairs of villages are listed as Upper/Lower (Jos/Sus), or Valley/Mountain (Vale/Deal) combinations. See: Iorgu Iordan, Toponimia Romînească (Bucharest: Academiei Republicii Populare Romîne, 1963), pp. 136-37, and 140-50.

[2] Sarton notes, for example, that some 320 temples have been discovered in the ancient Greek world where the cult of Asclepius was practised, and he claimed: "The importance of these temples for the development of early Greek medicine can hardly be exaggerated." George Sarton, A History of Science (New York: John Wiley & Sons, Inc., 1952), p. 333.

[3] Charlton T. Lewis and Charles Short, A Latin Dictionary (revised ed., Oxford: Clarendon Press, 1879; reprint ed., 1958).

In the Orient, tropical hill-stations are now also found in the one-time French colonies of Indo-China, the Philippines, China, and Japan, as well as in former British colonies in Burma, Ceylon, Malaya, Pakistan, and West Africa. Their distribution, however, varies considerably throughout the Orient, probably reflecting the length of residence and total number of Europeans resident in the area, the severity of the climate, the political standing of the Europeans, and the accessibility of the highlands.[3] Such criteria could also be used to explain the comparative lack of hill-stations in other British colonies, notably tropical Africa. In 1907 Sandwith wrote: "West Africa possesses no good health resorts."[4] The development of such centers as Joss, are of comparatively recent times. In East Africa much of the territory is mountainous. Nairobi, for example, lies at 5,500 feet altitude, comparable to the average height of Indian hill-stations. Moreover, in Africa a further criterion is worthy of consideration. To some extent the British hill-station in India fulfilled a psychological function as a center where groups of English could not only get together with their own kind, but could enjoy the amenities of city life as expressed, for example, through the activities of the English Club. In British Africa, the cities themselves were largely of British creation, eliminating the necessity for further hill-stations.

Since the Indian hill-station was created by the British for the British at a time when they were the colonial masters of India, one might have expected the hill-stations, or at least their functional significance, to have diminished or even disappeared when the British withdrew from the Indian scene at Independence in 1947. This happened under similar circumstances in Indonesia.[1] (In India, however, the hill-station seems to have flourished even since the large-scale departure of its creators. Furthermore, the hill-station is regarded by many Indians today, as an important type of settlement. Though it came into being as a product of imperialism, the hill-station continues, paradoxically, as a concomitant of Independence.) As a relict feature of colonialism it could have been rejected because of distasteful associations with the erstwhile foreign rulers, as evidenced by the legal installation of Hindi in place of English as the official national language; but it was not abandoned. Instead it was accepted, apparently for its prestige value. One is therefore prompted to ask: what were the functions of the original hill-station, how do they differ from its present functions, and what are its future prospects? The differences of function through time show the degree of Indianization which has taken place.

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[1] J. E. Spencer and W. L. Thomas, "The Hill Stations and Summer Resorts of the Orient," Geographical Review, XXXVIII, No. 4 (1948), 637-51.

[2] Ibid., p. 642.

[3] The criteria and their order were suggested by Spencer and Thomas, ibid., p. 644.

[4] F. M Sandwith, "Hill Stations and Health Resorts in the British Tropics," Journal of Tropical Medicine and Hygiene, X (1907), 369.

Methodology

General Contributions

This research into the raison d'être of the hill-station can be regarded as a study in cultural geography related to changing colonial societies.[2] From its origin as a foreign superimposition on the Indian landscape through its present accepted indigenous status, the hill-station has become an example of cultural interaction. A study of changing hill-station functions thus gives insight into this process, a process which includes Indianization.

Hill-stations are also related to colonial geography in connection with plural societies. The concept of plural societies in Asia probably derived from the idea of colonial dualism, as used by Boeke with regard to Indonesia.[1] However, this phenomenon is even more complex in India, where it is part of a hierarchical system including several layers of natives, and several strata of rulers in the total pluralistic social pattern. The British hill-station itself was perhaps one of the best examples of plural societies to be found, as the hierarchical pluralism not only was present in a subtle, psychological formation, as it is throughout India with the complexities of the caste system, but in North India a correlation between social standing and actual elevation of residence, revealed a social use of altitude. The lowly echelons were often confined to low-altitude and thus to less desirable hill-stations for their summer vacations, and the actual settlement pattern of some of the high-altitude stations in the Himalayas clearly shows hierarchical distinctions.

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[1] Bukittinggi, a hill-station in Sumatra, served as the anti-Dutch wartime capital during the Independence rebellions, and Prapat, a resort and tea estate area, was the scene of bitter fighting. Thus several hill-stations suffered severe physical damage during these years. The post-Independence Indonesian demand for hill-stations is relatively slight as few people can afford a vacation in the hills. Furthermore, hill resorts are frequently hampered by banditry. If not permanently closed by the government, there is a periodic military closure of many resorts because of brigandry. See: William A. Withington, "Upland Resorts and Tourism in Indonesia: Some Recent Trends," Geographical Review, LI (1961), 418-23.

[2] Though a type of settlement, it has not been a significant part of the work of those settlement geographers, as exemplified particularly by the German School, who are concerned primarily with settlement morphology. See the recent summaries by Gabrielle Schwartz, Allgemeine Siedlungsgeographie (3d ed.; Berlin: W. de Gruyter, 1966), and George Niemeier, Siedlungsgeographie (Brunswick: Georg Westerman, 1969). The morphology of the hill-station varies with each settlement according to its socio-economic functions, so that it does not fit neatly into any morphological settlement taxonomy.

Despite its unique development as a changing functional settlement, the hill-station has not been seriously studied by geographers. Though a few geographers have produced articles and theses on local hill-station areas,[2] there appears to be only one article written by them which gives a comprehensive account of the tropical hill-station. This was published by Spencer and Thomas (as referred to above) in 1948, and in the following year it was supplemented by an inclusion of a further list of hill-stations.[3] This monograph hopes to alleviate to some degree the present lack of geographic literature with regard to the hill-station.

Processes, Models, and Typologies

The functional modifications of the Indian hill-station during the years can be classified and evaluated by means of processes, models, and typologies. Figure 1 summarizes in a diagram form the historical hill-station process. Originating as a health center for British elite and military personnel, its functions by the end of the nineteenth century included sanatoria and some separate military hospitals, soon followed by official government summer headquarters for both civil service and military. At this time the sanatorium principle generally gave way to that of recreation, or sickness prevention. The Company established British schools, some of which were primarily military schools. Al-

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[1] See Julius H. Boeke, Economics and Economic Policies of Dual Societies (New York: Institute of Pacific Relations, 1953).

[2] These include: Mary Shaw, "Some South Indian Hill-Stations," The Scottish Geographical Magazine, LX (1944), 80-85; Steen Folke, "An Analytic Hierarchy in Comparative Regional Study," Collected Papers: Denmark, Prepared for the 21st International Geographical Congress, India, 1968 (Copenhagen: Københavns Universitets Geografiske Institut, 1968), pp. 1-17; Withington, "Upland Resorts."

[3] J. E. Spencer and W. L. Thomas, "The Hill Stations and Summer Resorts of the Orient," Geographical Review, XXXIX, Addendum (1949), 671.

HILL-STATION PROCESS

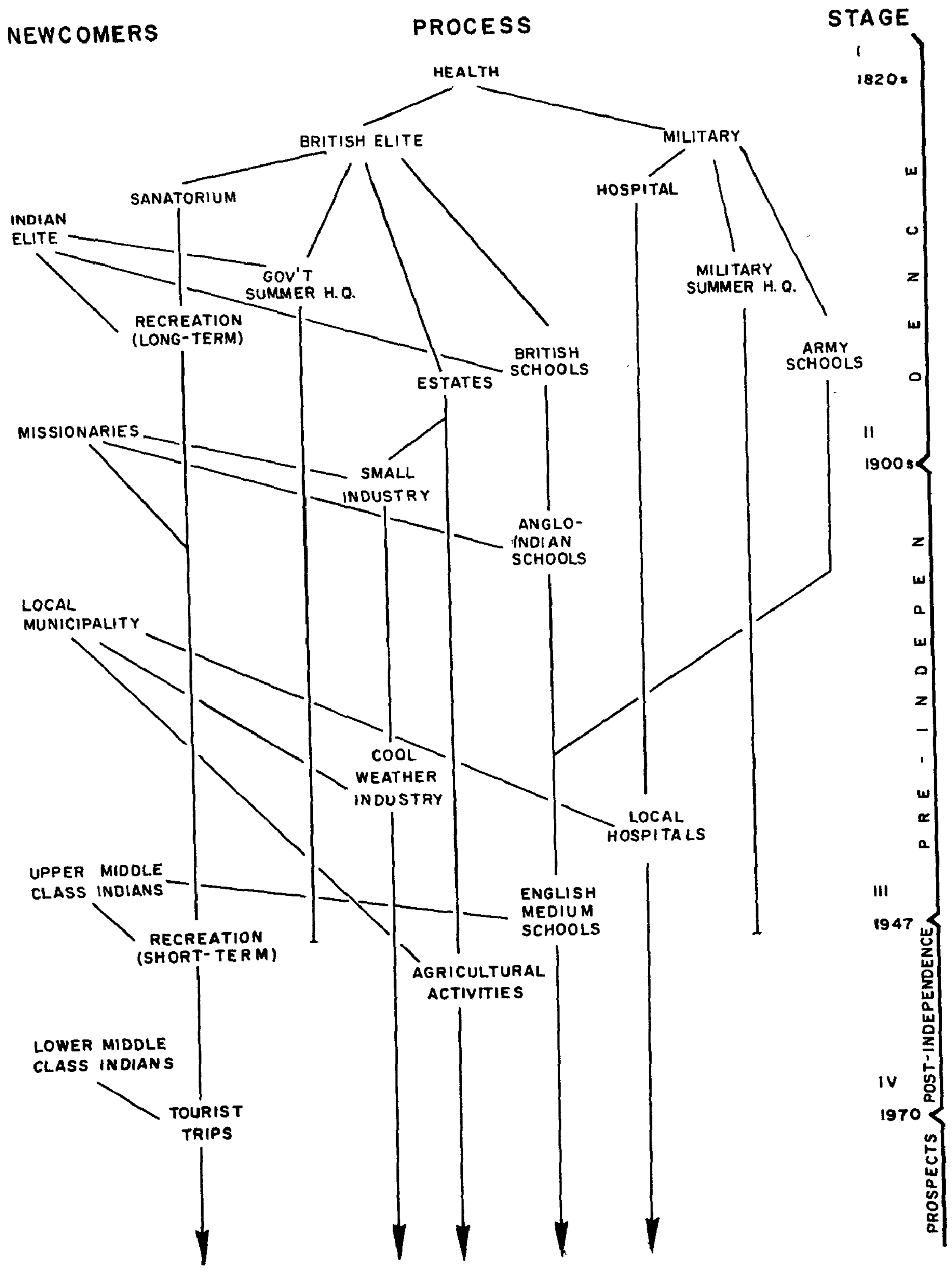

Fig. 1

ready in the early years an Indian elite as part of the civil service, came up to the hills with the Company to the government summer headquarters. They enjoyed the recreational facilities and some of them sent their children to British schools.

By the turn of the twentieth century many missionaries, both American and European, were taking part in recreational activities at hill-stations. They often established English schools, especially for the poorer Anglo-Indian communities, sometimes at lower-altitude hill-stations. Shortly after the turn of the century most hill-stations had formed urban municipalities which accepted responsibility for the servants, traders, and other local Indians who had settled at the hill-station in search of employment. They often encouraged local small-scale textile industries and other activities which involved the special high-altitude features, such as meteorological stations, film processing, or cash crop agriculture. Indians of an upper middle class could afford short vacations at the hill-stations even before Independence, and in recent years a new function has appeared, that of the quick tourist trips which are part of a few days' regional tour in a chartered coach. (It would appear that such short-term recreation holidays will become increasingly popular in future years, and thus the hill-station will probably remain a predominantly seasonal center. Increased industrial employment opportunities may be expected for the permanent residents during the long off-season periods. These are likely to be in small industries, especially textiles, plantation agriculture, food processing, and activities which thrive best in cooler weather. English medium residential schools which offer Indian university entrance, are likely to continue as more economically upper-middle-class Indians can afford to support them.)

From Figure 1 it is clear that one can also set up a series of hill-station models, representing the four time-stages in hill-station development. Stage I, from the founding of the hill-station to approximately the end of the nineteenth century, produces an interactance model (see Fig. 2:A), which shows a remarkably close analogy to the functions of the queen bee in a beehive. The British elite moved up to the top of the hill and lived in large spacious compounds at the hill-station. They commanded, and they were served by the entire community. Merchants and traders came up the hill with produce from the plains. Coolies came up to offer personal services. Cows were led up for a milk supply. Washermen came up to collect laundry. Some of the servants were brought up by the elite, often sent in advance to prepare vegetable gardens and firewood on the compound. They lived in servants' quarters tucked out of sight behind the main residence on the compound. Others set up a bazaar area away from the elite compounds, where they sold their goods and set up shacks. Local hill-villagers often carried garden produce into the bazaar or sold it directly in the compounds. They were joined by vendors who had come from distant regions of India with specialized Indian handicrafts also for direct sale in the compounds,

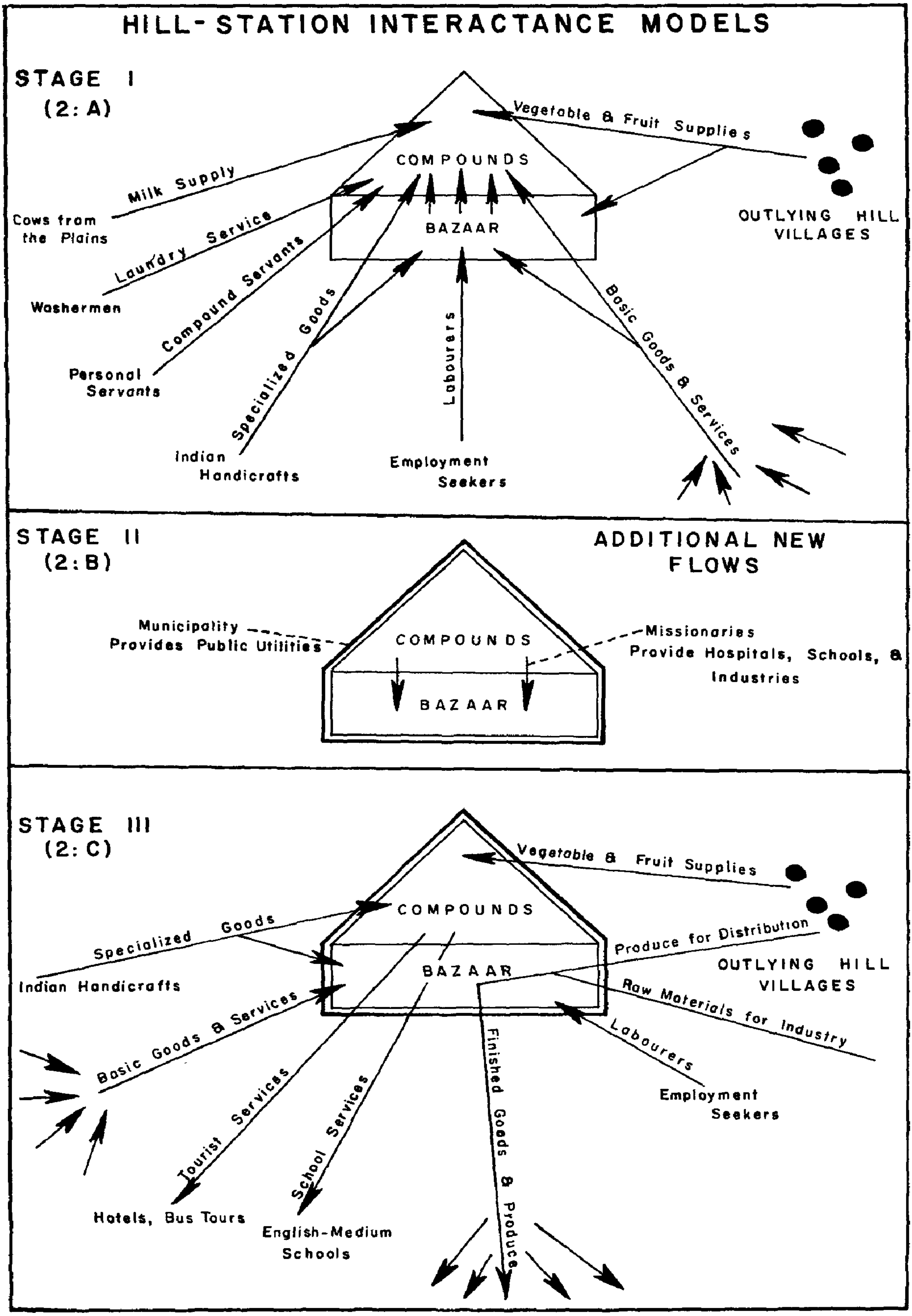
HILL-STATION INTERACTANCE MODELS
STAGE I
(2: A)
COMPOUNDS
BAZAAR
Vegetable & Fruit Supplies
OUTLYING HILL VILLAGES
Milk Supply
Cows from the Plains
Laundry Service
Washermen
Compound Servants
Personal Servants
Specialized Goods
Indian Handicrafts
Labourers
Employment Seekers
Basic Goods & Services
STAGE II
(2: B)
ADDITIONAL NEW FLOWS
Municipality Provides Public Utilities
Missionaries Provide Hospitals, Schools, & Industries
COMPOUNDS
BAZAAR
STAGE III
(2: C)
COMPOUNDS
BAZAAR
Vegetable & Fruit Supplies
Produce for Distribution
OUTLYING HILL VILLAGES
Raw Materials for Industry
Specialized Goods
Indian Handicrafts
Basic Goods & Services
Labourers
Employment Seekers
Tourist Services
Hotels, Bus Tours
School Services
English-Medium Schools
Finished Goods & Produce

Fig. 2

though some later set up stores in the bazaars during the summer season. The compound servants acted as intermediaries between the elite and the vegetable sellers, handicraft dealers, and beggars who visited the compounds, and also between the elite and the shopkeepers and coolies at the bazaar.

Stage II, still in colonial days, suggests a more complex model (see Fig. 2:B). Though all functions of Stage I continue, there is now evidence that services flow in two directions as new institutions and groups arise to serve and aid both the British and the indigenous personnel as well as be dependent on them in certain ways. Included among the elite are the missionaries who frequently set up schools, hospitals, and agricultural or textile industries for sections of the Indian communities. A further trend in this two-way flow is shown with the creation of the hill-station municipality. With British civil service leadership, it was very often set up to restore law and order to the increasingly overpopulated, under-employed bazaar quarters. It organized tax collection and the establishment of public utilities and services for both elite and bazaar sections of the hill-station.

Stage III (see Fig. 2:C) shows how the hill-station has taken its place in the general economic pattern of the region. Flow lines travel equally in both directions. The spacious compounds and the crowded bazaar are both controlled by the municipality. Though basic goods and workers for its growing industries continue to be drawn from the plains, the hill-station also serves an ever-growing series of hinterlands as tourist, school, and agricultural distribution center.

Stage IV is a projected continuance of present functions into the future. Because populations at hill-stations, as elsewhere, are expected to continue to rise rapidly, there will probably be considerable increase in industries at the hill-stations. It is certainly expected that many more people will be able to visit hill-stations during the summer, so that the hill-station is likely to remain essentially a seasonal settlement. English-medium schools of high academic repute seem to have become very popular among the growing middle- as well as the upper-classes and are likely to continue to flourish in the foreseeable future.

Also from Figure 1, and closely related to changing functions through time, it is possible to classify a set of hill-station typologies. These are diagrammed in Figure 3 according to the time-stage (see Fig. 1) in which they became functional. They are discussed in Chapter III.

Organization of the Study

This monograph consists of two parts. The first, primarily historical and based on library resources, focuses on the origins and development of Indian hill-stations in general. It deals primarily with the colonial society out of which the hill-station has evolved.

HILL-STATION TYPOLOGIES

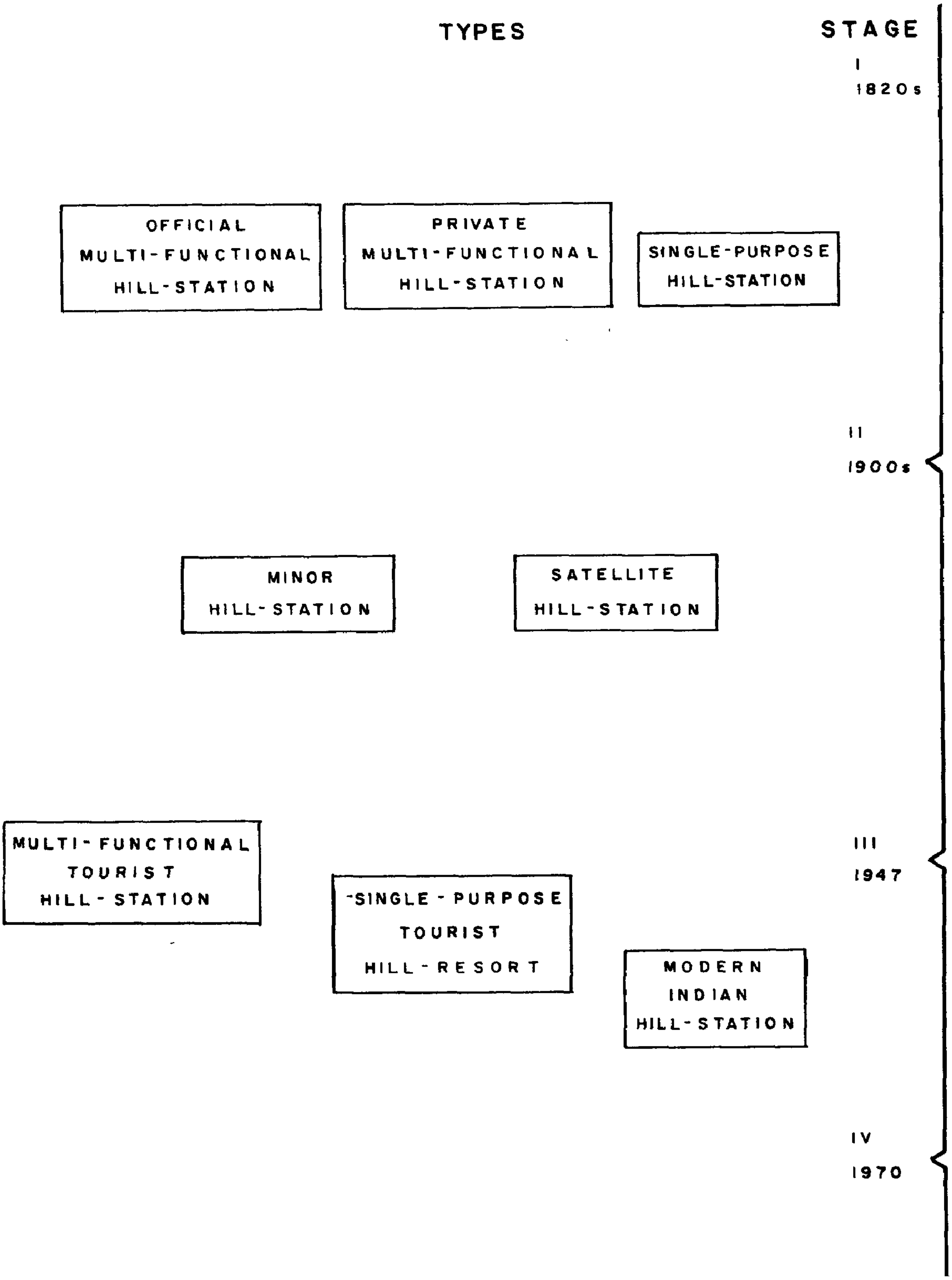
TYPES
STAGE
I
1820s
OFFICIAL MULTI-FUNCTIONAL HILL-STATION
PRIVATE MULTI-FUNCTIONAL HILL-STATION
SINGLE-PURPOSE HILL-STATION
II
1900s
MINOR HILL-STATION
SATELLITE HILL-STATION
III
1947
MULTI-FUNCTIONAL TOURIST HILL-STATION
SINGLE-PURPOSE TOURIST HILL-RESORT
MODERN INDIAN HILL-STATION
IV
1970

Fig. 3

The second is primarily functional in orientation and is based on field materials by which the functions of a specific Indian hill-station, that of Kodaikanal in South India, can be described and analyzed in terms of their effects on the landscape. It evaluates the criteria which determined the needs of the Europeans and the social changes and political organization which have arisen as a result of the process of Indianization.

In Part I, the rationale of the Indian hill-station is discussed in connection with the Englishman's perception of the health hazards he faced in the tropics. This discussion refers both to the background of cumulative knowledge with which the Englishman went to India, and also to the binding social customs he imposed upon himself and which he was reluctant to sacrifice. He thus found adaptation to tropical life extremely difficult. With the development of the hill-station, the Englishman felt he could avoid or overcome many of the health problems connected with the tropics. As a result he modified favorably his perception of what life in India might be like. From that time on the hill-station became a seemingly essential adjunct to the British way of life in India.

Was the need for the hill-station real or did the British merely perceive it as such? A part of this section of the research is devoted to a study of the actual health hazards the Englishman faced in India. It takes the form of a discussion of the distribution of some of India's common tropical diseases, with particular reference to their relative prevalence in the plains and at hill-station altitudes and the debilitating physical effects of heat to body and mind.

Next, the development of hill-stations in India is traced both historically and geographically, with special reference to the principles which played important roles in their location and distribution, and to the different types of hill-stations which evolved at various historical stages in both colonial and Independent India.

In Part II, a more genetic approach is associated with an attempt to analyze and measure the various functions of the hill-station from its origins to the present through a more detailed study of a specific hill-station. As one of the higher hill-stations of the south at 7,300 feet above sea level in the Palni Hills, Kodaikanal has been a typical hill-station since its creation.

The first part of this section investigates the origins of Kodaikanal (familiarly known as Kodai), discussing its geographical position and background, and the reasons, both physical and cultural, for its location. The text continues with a history of the hill-station, and a discussion of its settlement pattern and the extent of its functional influence during the nineteenth century. It next investigates the expansion of such influence in the twentieth century.

Though it originated and developed as a foreign exclave, the functions of Kodai did not decline after Independence. The reasons for its continuance require careful investigation, which must include concern with migration associated with its tourist functions; with the changing characteristics of its permanent residents; and also with its changing functions as a distribution center. The final section of this study, therefore, is concerned with the expansion and change of functions in the contemporary hill-station and with the extent to which Indianization has taken place.

CHAPTER II

RATIONALE FOR TROPICAL HILL-STATIONS

Considerable attention has been paid in recent years to the study of environmental perception in social studies research.[1] It has become apparent that, to a formerly unrecognized extent, man's behavior is a consequence of perceived reality, and that such perception varies greatly from place to place and over periods of time. Effort has been made in this chapter to discover how the British rulers of India perceived the climatic environment in which they found themselves, taking into consideration the background of cumulative knowledge with which they arrived in India. From this viewpoint it is possible to understand the Englishman's perception of the hill-station as an alternative to a change of custom.

Since time immemorial conquerors have apparently felt themselves to be superior mortals. The Greeks prided themselves on their abilities as leaders of the world; the Romans on their organizing qualities; and in the Age of Discovery Europeans again set forth to conquer the world. There was little question in their minds of their rights to subdue the "lesser" peoples, the natives in these newly found colonies. The British in their turn were proud of their achievements, particularly of their great Indian Empire, as seen by comments such as the following written at the height of the Victorian era:

> That we should have consolidated an empire by spending our own, as well as its treasure, in developing the country by roads, canals, railways and telegraphs, might have been expected from the enlightened policy and the mechanical genius of a gifted race. That we should have succeeded in striking the imagination of the Orientals by the enactment, and the equal administration of just laws, might have been hoped; but we have even extorted their gratitude in showing them the high value we set on their lives by the everyday working of a widespread system of medical relief, and by our immense efforts to keep alive starving millions whom their native rulers would have inevitably let die.
>
> There has been no such wholesome work of good government done in the last century; and we may be proud of our work, while other nations look on it with ill-concealed amazement.[2]

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[1] For a recent review of the pertinent geographic literature see: Thomas F. Saarinen, "Environmental Perception," in Focus on Geography, ed. Phillip Bacon (40th Yearbook; Washington, D. C.: National Council for the Social Studies, 1970), pp. 63-99.

[2] Edward J. Tilt, Health in India for British Women and on the Prevention of Disease in Tropical Climates (4th ed.; London: J. & A. Churchill, 1875), p. 3.

Though the British could conquer the tropics, they believed they were not created to live permanently in hot lands. Ancient Greek notions of the influence of climate on man and medieval perceptions of humors and miasmic airs had to some extent continued, and become part of the cumulative knowledge with which the Englishman went to India. In the early twentieth century many such notions were re-inforced by environmental determinists who held that the ultimate cause for man's achievements or lack thereof, lay in the climate. Thus comes the sad end of the story which, as the author explained had "opened so bravely" above;

> We could conquer India, but we succumb to its climate; and we can take no root there, as in North America and Australia. Every additional year spent in India increases our liability to its diseases without lessening their fatality . . . Children must be sent home, or grow up sickly in mind and body. If a British family keeps its blood unalloyed, it dies out in a third generation.[1]

The British were unwilling to adapt their customs of dress, food, or even architectural styles, in any way whatever to suit the climate, unless they discovered that despite all pride and obstinacy, their habitual method would simply not work. In this case small concessions had to be made, as for example, in the substitution of cotton shirts for starched linen ones: but ties, tight woollen jackets, and flannel underwear remained. Thus they did not help themselves to adjust to a tropical climate. The hill-station, then, gave them a new lease on life once its benefits were discovered, and no obstacle was too great to be overcome in order to create a "taste of Old England" on the hills of India. As long as the British remained in India, they spent the summer months in the hills.

Were they really healthier in their hill-stations, or did they just imagine they were? India has its share of tropical diseases. Included among the more prevalent ones are cholera, malaria, leprosy, smallpox, filariasis, hookworm, typhoid, and dysentery. Other types of disease and debility which seem to be either directly associated with hot weather conditions or indirectly connected through soils, are also rife in India. These include heat-stroke, tropical fatigue, and malnutrition. If it could be shown that the altitude of the hill-stations leaves them largely free of such diseases, then it could be claimed that hill-stations had been necessary for the health as well as for the improvement of comfort and well-being of the British in India.

In this chapter attention is turned first to the perception of health hazards in India, then to the actual health hazards, and finally to the significance of the hill-stations in overcoming these hazards.

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[1] Ibid.

Perception of Health Hazards

The Englishman's perception of hazards to health in India revealed both a continuation of certain classical ideas of relations between climate and health or energy, and also an amazing lack of perception of adjustments that might be made to climatic conditions which differed sharply from those of his cool maritime climate of Britain.

Ancient Classical Ideas Continued

The British who gained a kingdom in India had a long heritage of disease perception. Its background was a three-fold one, including a magical, religious, and empirical conception of disease. All three have been present, to a greater or lesser degree, in the thinking which preceded modern medical knowledge, and perhaps the greatest strides in scientific treatment of tropical diseases came years after the British first went to India.

The magical and religious ideas were no longer a prevailing influence when the British reached India in the seventeenth century, though the particular empirical conception of disease which they inherited still played an important role in their environmental perception. It stemmed from the Greeks who, perhaps influenced by the Egyptians, first led the way to an art of healing based on observation and experience.

Two ancient ideas were prevalent among the British in India: miasmas, or swamp airs, as a cause of disease, and climate as an explanation of human characteristics such as energy. Both can be traced to Greek thinking.

To the Greeks health became a question of balance and symmetry. An early contributor to Greek medicine was Thales of Miletos (c. 624-548 B.C.), whose declaration that moisture was the primary cause of all things remained the basis of later studies. Anaximentes (c. 550 B.C.), declared air rather than moisture, to be the primary cause. This was accepted and fires were lit to purify the air during the plague of Athens.[1] The Pythagoreans contributed number and symmetry into medicine, with four as the ideal number, representing two pairs of opposing forces.[2] Alcmaeon, a disciple of Pythagoras, claimed that health was an equilibrium of such forces in the body. If any one force dominated, disease resulted. Empedocles (c. 492), postulated that everything which existed was made up of four unchangeable elements--air, fire, earth, water--which might be upset by forces such as atmospheric conditions, faulty diet, or wrong living. By the time of the Hippocratic Corpus the four elements were associated with the four cardinal humors in the human body--blood, originating in the heart, corresponding to air; phlegm from the brain, corresponding to water; yellow bile, produced in the liver, corresponding to fire; and black bile, sometimes known as melancholy, formed in the spleen, corresponding to earth.[1]

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[1] Sarton, op. cit., pp. 177-78, 332, and 386.

[2] Henry E. Sigerist, Civilization and Disease (New York: Cornell University Press, 1943), p. 149.

The theory of the four humors was further developed by Galen in the first century A.D., when it was understood that each humor, as well as each natural element, had the same elementary qualities. Thus blood and air were both hot and moist; yellow bile and fire, hot and dry; phlegm and water, cold and moist; while black bile and earth were cold and dry. The symmetry of Pythagoras was thus upheld in that two pairs of opposing forces were recognized, dry and moist, as well as hot and cold. When the humors were normal in quantity and quality and equally mixed, the state of equilibrium prevailed and man was healthy, but if one humor came to dominate, disease resulted. It was also possible that one or other humor predominated only sufficiently to explain the different temperaments and constitutions of people, without being so dominating as to cause actual disease.

The theory of the four humors became even more influential in medieval times when an expansive literature developed in the monasteries, with regard to the question of the human constitution. Mankind was classified into four groups, the Phlegmatic, the Sanguine, the Choleric, and the Melancholic, according to which of the four humors predominated in his constitution. Scholastic physicians and scientists, such as Albertus Magnus, devoted much time to these taxonomies, which were further stabilized by astrological works where each type of man became associated with a specific planet.[2]

It may have been the fourfold order of Paracelsus (1493-1541), that helped the theory of miasmas to become more dominant during the early modern scientific era. He postulated that evil as well as good came from nature; poisons as well as remedies and food. Thus it was easy to believe, before knowledge of malarial parasites, that people who lived in damp swampy areas were made ill by breathing in the odorous, poisonous miasmas in swamp airs.

Belief in miasmas still underlay the thinking of many of the British in India, even as late as the early twentieth century, where it became associated particularly with the northeast winds. It was considered suicidal to leave doors or windows open at night, regardless as to how hot it might become indoors, especially during the season of the Northeast Monsoon.

Another emphasis of Greek medicine was on medical climatology. One of the

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[1] It has been theorized that the spleen was ranked as such an important cardinal organ because of the prevalence of malaria in the Greek lowlands, which caused frequent megalospheny. See William H. S. Jones, Malaria and Greek History (Manchester: The University Press, 1909).

[2] Henry E. Sigerist, Man and Medicine (New York: Cornell University Press, 1932), p. 106.

Hippocratic treatises, Airs, Waters, Places, the genuineness of which has apparently rarely been questioned, could be described as the first treatise on medical climatology. It explained the effects of physical features on the health and characteristics of individuals and civilizations. The dominance of one or other humor in the human body was ascribed to environmental conditions such as temperature, nearness to water, prevailing winds, or altitude. Furthermore, differences in types of landscape, seasonal temperatures, and precipitation, could explain not only physical and mental health, but also, to a considerable extent, both physical and cultural characteristics of peoples as a whole. Thus we read in Hippocrates:

> Such as inhabit a country which is mountainous, rugged, elevated, and well watered, and where the changes of the seasons are very great, are likely to have great variety of shapes among them, and to be naturally of an enterprising and warlike disposition; but such as dwell in places which are low-lying, abounding in meadows and ill ventilated, and who have a larger proportion of hot than of cold winds, and who make use of warm waters--these are not likely to be of large stature nor well proportioned, but are of a dark complexion; courage and laborious enterprise are not naturally in them.[1]

Such Hippocratic ideas diffused into political and social thought through their acceptance approximately a century later by Aristotle. The people of the cold regions of northern Europe, he believed, were spirited but deficient in skill and intelligence. Though they were able to preserve their freedom they lacked political organization and were incapable of governing others. Peoples from the warm lands of Asia were intelligent and inventive but deficient in spirit and were thus in subjection to northern masters. The Greeks, however, who lived in the temperate lands between the two represented the "Golden Mean." They possessed the good characteristics of both groups, being on the one hand skilled and intelligent, and on the other, spirited and independent and able to rule others. The environmental problems as expressed by Aristotle in Problemata read:

> Why are the inhabitants of warm regions cowardly, and those who dwell in cold districts courageous? Is it because there is a natural tendency which counteracts the effects of locality and season? Now those who are hot by nature are courageous, and those who are cold are cowardly. But the effect of hot regions upon those that dwell in them is that they are cooled, while cold regions engender a natural state of heat in their inhabitants.[2]

Such problems of the influence of environment, especially of climate on man were accepted and spread into the Roman world by Strabo and Pliny, and they can be traced throughout medieval centuries,[3] though they were relegated to a less important position as ecclesiastical theories came to the fore. They revived again, however, in early modern times of the eighteenth and nineteenth centuries. The impact of classical conceptions of the environment was very clear on the thinkers and poets of the Renaissance, and it became incorporated into the sciences in the late nineteenth century. Borrowing from the biological sciences, notably from Haeckel's plant and animal ecology of 1870[1] Ratzel's Anthropogeographie of 1882,[2] concerned itself with human ecology as the study of man in relation to his environment. Particularly in the United States with Semple's translation of Ratzel into English[3] and through their widespread acceptance by English-speaking geographers, these ideas developed into environmental determinism.

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[1] Airs, Waters, Places, No. 24. Translation as found in Medical Classics, III (Baltimore: Williams & Wilkins Co., 1938-9), 41.

[2] Problemata, Loeb Classical Library: quoted in Clarence J. Glacken, Traces on the Rhodian Shore (Berkeley: University of California Press, 1967), p. 93.

[3] See for example, Glacken, op. cit.: Part I, pp. 80-116; Part II, pp. 254-88; Part III, pp. 429-61; Part IV, pp. 551-623.

With the environmentalists came a recurrence of some of the classic Greek notions that the temperate-zone inhabitant was superior to the dweller in hot lands because of his vitality and energy, a gift of his climatic environment. Wherever man lived in low latitudes, it was felt, he deteriorated. In the words of Semple: "Where man has remained in the Tropics, with few exceptions he has suffered arrested development. His nursery has kept him a child."[4] Subscribing to views similar to these, the British understood that it was dangerous for them to settle permanently in India. As late as 1937 in an account of the history of the Madura Catholic Mission, a missionary to South India wrote: "Prolonged residence in the tropics saps, they say, the energy and dulls the enthusiasm of the European."[5]

To many the hill-station seemed a solution to the health problem and some assumed it to be a panacea for all ills. Others, however, remained skeptical. In his school textbook in 1889, Chisholm wrote:

> To Europeans the residence on tropical hills is perhaps more healthy than residence on the low grounds in the same latitudes; but even at the elevation at which coffee is grown, a tropical climate is for them neither healthy nor agreeable. The enervating effects of the heat and moisture render them unfit for work such as they could engage in with comfort in more temperate regions.[6]

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[1] Ernst Haeckel, "Über Entwickelungsgang und Aufgabe der Zoologie," Jenäische Zeitschrift für Medicin und Naturwissenschaft, V (1870), 365.

[2] Friedrich Ratzel, Anthropogeographie, I and II (Stuttgart: J. Engelhorn, 1882-91, 2d ed. 1899-1912).

[3] Ellen Churchill Semple, Influences of Geographic Environment (New York: Henry Holt, 1911).

[4] Ibid., p. 628.

[5] Joseph C. Houpert, A South Indian Mission: The Madura Catholic from 1535-1935 (Trichinopoly: St. Joseph's Industrial School Press, 1937), p. 90.

[6] George G. Chisholm, Handbook of Commercial Geography (London: Longman, Green, 1889), p. 17.

The hill-station, thus, was not necessarily the entire answer to the problem of the white man living in the tropics, even according to the environmentalists.[1]

The Bind of Custom

Many customs the British introduced into tropical India, especially clothing and food habits and architectural styles, did little to add to their comfort. The majority of British who served in the East India Company were from England's high society to whom the social graces were an extremely important part of life. In a comparatively isolated position in India they clung tenaciously to their English customs, however unsuited these were to India. Criticism was often ineffectual, for there had been complaints, especially by doctors, during the centuries. Of the seventeenth century Giles suggested:

> Furlough to Europe was impossible and the hills were unknown, but in spite of this, many of the seasoned veterans who had learned their lessons lived, in the land of their adoption, to a green old age. But the rank and file who could not or would not learn, died off like rotten sheep.

Of the eighteenth century he wrote:

> A hundred years ago a prolonged residence in the tropics was regarded with well-founded horror. The best the white settlers in the lands of the sun dared hope for was 'a short life and a merry one', but too often the merriment was sadly lacking.

His comment for the early nineteenth century was even more explicit:

> So fated is the want of caution and intolerance of precaution inherent in early manhood, that most authorities recommend that, if possible, emigration to a hot climate should be postponed to the age of 25. This obstinate determination to carry to tropical parts habits of life suitable only to the more temperate parts of Europe was carried in old times to an almost incredible extent.[2]

In the late nineteenth century Tilt pointed out that as the British soldier never changed his customs, it was possible to evaluate regional differences within India according to the mortality rates of the soldiers. He wrote:

> The only way we have of estimating the relative healthiness of different parts of India for Europeans, is the variable mortality of the British soldier in the different regions, because, wherever stationed, he continues to be the same specimen of British humanity, his clothing, diet, vices, mode of life are everywhere the same, so it

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[1] During the latter half of the nineteenth century a controversy developed especially among members of the British Indian Army Medical Service, concerning the usefulness of the hill-station. Literature commenting on the controversy includes: William Curran, "The Himalayas as a Health Resort," The Practitioner (January, 1871), pp. 27-44; idem, "Further Evidence in Favour of a Hill Residence for European Soldiers in India," Irish Journal of Medical Science, LII, No. 104 (1871), 391-416; G. M. Giles, Climate and Health in Hot Countries (London: John Bale, Sons, and Danielsson, Ltd., 1904); and Tilt, Health in India.

[2] The three quotations are found in Giles, Climate and Health, "Introduction," pp. iii-iv.

is supposed that if he dies too frequently in any given spot, it is bad for Europeans to reside there.[1]

There is suggestive evidence that the twentieth century still contained many vestiges of older customs which would have been better omitted. For instance, rather than take a noon siesta during the hottest part of the day, it had become customary for the British to make social calls at this hour. Writing of the 1920s in Calcutta, Rogers stated: "In India all newcomers call on older residents. The strange convention then held that annual calls were made on Sundays, between noon and 1 p.m., the caller wearing a top hat and frock coat."[2]

Clothing

The unwillingness of the Briton to change his dress style in the tropics becomes apparent as one looks at old pictures. Figure 4, reproduced from the mid-nineteenth century setting of Captain Bellew's historical novel, Memoirs of a Griffin, shows the general of a yet earlier period, a long-term resident in Bengal, received on board with his retinue of pig-tailed sailors, the last of their kind. A description in the text reads:

> He wore a red camlet raggie, or Swiss jacket, with blue collar and facings, a white waistcoat, wide open, from which a volume of frill protruded. His nether man was encased in a pair of tight nankeens, buttoned at the ancle. A round hat of black silk, with a bullion loop and button, completed the outward appearance of the Bengal veteran.[3]

The tight trousers and long woollen coats of the British Navy stand out in sharp contrast to the cool loose clothing of the Indians, and also to the open-necked shirts of the general's retinue. Figure 5 shows the before-dinner dance dress of a similar period reproduced from Atkinson's Curry and Rice on Forty Plates.[4] The Ladies' hooped skirts and the men's tight suits with collars and ties are identical to those used at similar celebrations in England. One must imagine this exercise taking place in a possible 100°F. temperature, however, as compared to the chilly evening temperatures in England. Comments on this situation read:

> The natives of the East are still wise men, for instead of dancing themselves they employ Natch girls to dance for them.[5]

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[1] Tilt, op. cit., p. 14.

[2] Leonard Rogers, Happy Toil (London: Fred Muller Ltd., 1950), p. 57.

[3] Captain Bellew, Memoirs of a Griffin: Or A Cadet's First Year in India (London: William H. Allen & Co., 1880), p. 65.

[4] George F. Atkinson, Curry and Rice on Forty Plates: Or, The Ingredients of Social Life at "Our Station" in India (London: John B. Day, 1856), Plate No. 25.

[5] Comments quoted from a reproduction of the scene in E. T. Renbourne, "Seasoning Fluxes and Fevers of Acclimatization: An Introduction to the History of Tropical Adaptation," Journal of Tropical Medicine and Hygiene, LXVI, No. 8 (August, 1963), 197.

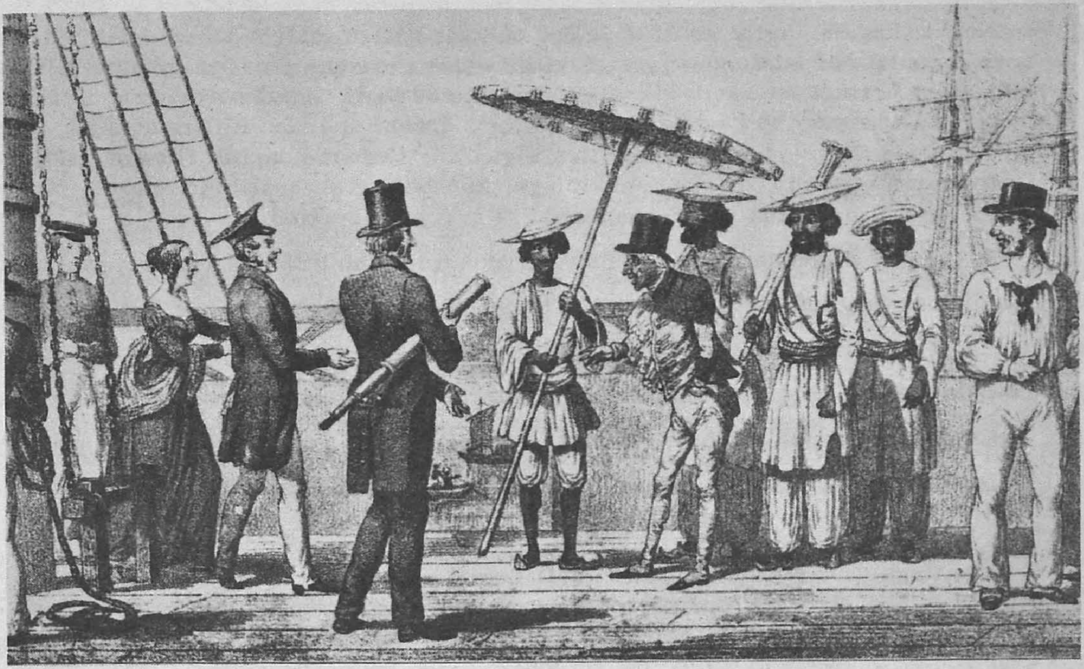

Fig. 4.--The General on board an East India Company Vessel. (Taken from Captain Bellew's Memoirs of a Griffin.)

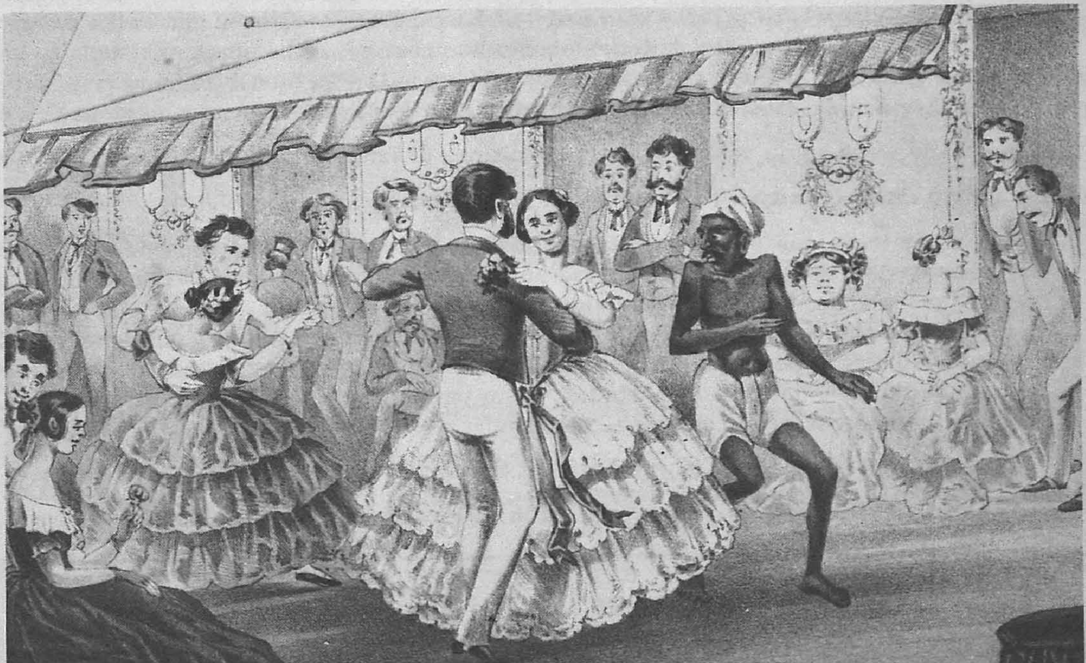

Fig. 5.--A pre-dinner ball at "Our Station." (Taken from Captain Atkinson's Curry and Rice on Forty Plates.)

Of the dress of the British army Giles was exceedingly scornful, and he expressed himself bluntly on this score.

> Now and again, in the guest chamber of some native noble's house, one may come across quaint old paintings and engravings which show our great grandfathers fighting or playing cricket in exactly the same costume as their contemporaries at home. No alteration whatever was made in the soldier's dress, and his officers duelled, drank, and gambled in the same old Ramillies wigs . . . Even the earlier files of the Illustrated London News show the same things, and looking at these old pictures, the wonder is not so much that many succumbed as that any survived.[1]

In 1810, Williamson, being concerned because of the little information available to recruits before they left for India, wrote The East India Vade-Mecum. It filled two extensive volumes and gives an excellent insight into prevalent customs of the late eighteenth and early nineteenth century British India. Arrangements were to be made with tailors so that replacement clothing could be sent out when necessary, and those articles purchasable in India were also listed. For the initial trip the following selection shows part of the necessary wardrobe:

> The first point for consideration is the quantity and the quality of the shirts, of which not less than four dozen should be provided. They ought to be of very fine, stout calico, such as may be used in a hot climate where linen is particularly prejudicial to health, owing to its feeling cold when moist with perspiration . . .
>
> Undershirts, made of chequered calico, of a moderate fineness, will be found extremely pleasant, and preserve the upper-shirts from being soiled by contact with the body: of such an equal number should be made.
>
> . . . and, as articles in great request abroad, about four dozen of white waistcoats, made of fine Irish linen. Breeches in the same proportion, and of the same qualities. To wear with the latter, two dozen pairs of long cotton stockings, and half a dozen pairs of short, wove cotton drawers should be provided. The stockings aught to be of the best quality. A dozen pairs of silk stockings will also be useful on arrival in India, where they are extremely scarce, generally damaged, and bear an enormous price.[2]

There actually were some concessions to conditions of tropical heat. Williamson is careful to explain the necessity for these:

> In many instances evening visits are paid in a very airy manner: coats being often dispensed with; the gentlemen wearing only an upper and an under waistcoat, both of white linen and the former having sleeves. Such would appear extraordinary freedom, were it not established by custom; though it generally happens, that gentlemen newly arrived from Europe, especially the officers of His Majesty's regiments, wear their coats, and prefer undergoing a kind of warm bath of the most distressing condition, both to themselves and to their neighbours.[3]

During the 1857 Mutiny it was realized that bright reds and blues were not the wisest colors for officers' uniforms, and as in Europe, a change of color was allowed. Of the concessions Giles commented:

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[1] Giles, Climate and Health, p. iv.

[2] Thomas Williamson, The East India Vade-Mecum, or, Complete Guide to Gentlemen Intended for the Civil, Military, or Naval Service of the Honourable East India Company (London: Black, Parry, and Kingsbury, 1810), I, 8.

[3] Ibid., p. 115.

> The dire struggle of the Indian Mutiny led to the first attempts to clothe and treat the soldier in a somewhat more rational fashion, and since then great improvements have been affected; but a great deal more remains to be done . . . before our military statistics can be expected to show how little this evil reputation is due to the climate itself, and how much has really been caused by human misdirection.[1]

The Victorians were not a great deal more practical about the questions of clothing than had been their predecessors. In India too, it was expected that one wore flannel vests. Eventually in India, however, the vest shrank into a belt, specifically worn as a protection against chills which it was thought led to cholera. It was thus called a cholera belt. Of the flannel vest Giles decreed:

> The 'flannel next the skin' doctrine is applicable only to those blessed with hides sufficiently phlegmatic to tolerate the material; and enthusiasts in its favour are apt to forget that our powers of resistance to extreme heat depend entirely on the healthy action of the skin . . . [which] if it be kept in a condition of chronic inflammation by 'prickly heat' must necessarily be more or less incapacitated from performing its proper functions.[2]

The cholera belts died hard. As late as 1938 Castellani still finds some use for them:

> As regards underclothing, very thin woollen materials are the best. At one time the use of abdominal woollen or flannel belts (the so-called 'cholera belts') was much abused: they are useful, however, to people with a tendency to intestinal disorders.[3]

Victorian starched frills and linens also, if perhaps reluctantly, went out of favor in India considerably sooner than in England to the delight of Giles, the medical practitioner and no advocate of unsuitable styles:

> In choosing a costume for the really hot weather it must be remembered that any material requiring to be starched is about as suitable for the purpose as mackintosh [rubber] sheeting, because linen and cotton fabrics, starched and ironed, are, as long as they retain their appearance, quite as impervious to transpiration. After they have lost their stiffness their appearance is most objectionable and disgusting, and it is a fortunate circumstance that they become so soon sodden, as there can be no doubt, that but for this, their use would be clung to by the conservative Briton, far more than he is able to.[4]

With regard to women's dress, there has probably been even less possibility of avoidance of prevalent customs. Even in the modern era of the 1930s, Christopherson, who lived through the days of women's emancipation, felt very strongly that women should be properly dressed for protection against insect bites, rather than for adornment and attraction. He did not hesitate to speak his mind as he wrote:

> English women's dress is the most urgent reform needed in the tropics . . . The average woman will not be able to what is termed 'stand the tropics' until she fully

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[1] Giles, Climate and Health, p. iv.

[2] Ibid., pp. 22-23.

[3] Aldo Castellani, Climate and Acclimatization (London: John Bale, Sons & Curnow Ltd., 1938), p. 155.

[4] Giles, Climate and Health, p. 26.

> realizes and puts into practice the modern rendering of 'protection in dress', and until she abandons adornment as the motive. Clothing for health, convenience and utility must be the sole aim.[1]

In the tropics, headgear has usually been considered the most important item of clothing. Until recently it was generally considered to be dangerous to go out of doors, even for a few moments, without suitable broadbrimmed head covering. Hats were also worn outside at night as protection from both the moon's rays and the malevolent night airs. Giles, so impatient with unsuitable customs of over-dressing in the tropics, is adamant on the necessity of protective headgear. He especially condemned the brimless "fez type" hat unmercifully:

> The matter of head covering requires special consideration. For India, and other climates where sunstroke is common, a good sunhat is indispensible . . . The singularly unpractical 'fez' which, save as a protection for the bald within the house, appears about the most ill-contrived headgear yet contrived. To wear one in June in most parts of India, would be certain death to the majority of Europeans, and few could venture to wear it at any time of the year.[2]

Even a broad-brimmed hat was considered insufficient protection for the sensitive upper spinal vertebrae. Special spinal pads were recommended to be stitched inside the shirt or buttoned on to the coat with hooks and eyes as additional protection under the brim of the hat.

Experiments were done in the early twentieth century on color, to discover which colors have the highest capacities for heat absorption. In 1907, Sambon concluded that white man should wear black, red, and orange, as these colors exclude the short rays. White was satisfactory only for those people with good pigment protection. Through his efforts to mix twisted yellow and blue threads for the warp of his material, with red for the weft, he produced khaki as the best color for military uniforms.[3] The new aluminum-lined pith helmets of the twentieth century were made khaki-colored. This type of headgear is still popular for policemen and other outdoor workers, especially among Anglo-Indian communities. It was considered a "must" at mid-century, as described by Castellani:

> All Europeans should wear a light pith helmet or topee covered with khaki-coloured cloth externally and ventilated. This helmet should have a broad brim lined with green, and prolonged down the back of the neck: it should be lined internally with red or red and yellow or black, and should possess an internal band attached in such a manner that the head does not touch the frame of the hat, while it allows free circulation of air.[4]

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[1] J. B. Christopherson, "The Motive in Women's Dress in the Tropics," Journal of Tropical Medicine and Hygiene, XXXIII, No. 14 (1930), 206.

[2] Giles, Climate and Health, p. 29.

[3] Louis W. Sambon, "Tropical Clothing," Journal of Tropical Medicine and Hygiene, LVII (1907), 67-69.

[4] Castellani, op. cit., p. 151.

It is only in very recent years, probably only since the Second World War, that the British, now often hatless in Europe, are also seen hatless in the heat of India.

Food

Giles, as a doctor, tried to show the necessity for eating in moderation, with the use of more Indian foods such as grams and pulses which are rich in proteins and form a good substitute for some of the "quasi leather that has to pass for meat in tropical weather." Of pulses he claimed:

> Many of these are far more nutritious even than meat. No doubt religious and economical considerations have had much to say in the development of this preference [among Indians], but, on the other hand, the minute regulations to be found in many religious codes are very often based on really sound sanitary notions that have grown up as the result of traditional experience, and it is probable that the repugnance of the Hindu for meat food, though doubtless carried too far, is based on something more than a mere whim of ritual, and that the introduction of pulses into our dietry as a partial substitute for meat would be advantageous, at any rate during the great heats.[1]

Already thirty years earlier, another doctor had advocated a similar policy:

> It has not been found difficult to persuade our countrymen who go to the Arctic regions, that they are to imitate the Esquimoux in their principles of diet, in order to keep themselves warm . . . It is, however, difficult to make Englishmen understand that in India their diet ought to somewhat resemble that of the Hindoo. The heat of the climate will to a great extent provide for the warmth of the body, so the main object of eating is to supply materials for the ever progressing reconstruction of our tissues . . . Greasy made dishes should be avoided, but curries commend themselves, as the result of a highly judicious conservative instinct.[2]

Both men apparently talked to deaf ears, for the Englishman, not only continued to eat and drink in India as did the higher society in England, but most often in excess of what he would have done at home. An open house was regularly held by officers and married residents of the English communities in most areas of India and sumptuous meals became largely a question of prestige. Bellew, in his novel, attempted to emphasize the folly of the Englishman's vices with regard to food:

> In India, bathing and early rising principally contribute to create the amount of health generally enjoyed there, which would be far greater and less precarious than it is, were it not for an immoderate indulgence in the pleasures of the table, which inflames the blood, disorders the liver, and renders the whole system peculiarly susceptible of disease.[3]

He gives an account of breakfast as it was in the routine in many an officer's home:

> The colonel gave us a superb breakfast and it was plainly observable that his reputation as a gastronome had not been over-rated. Ham, fish, jellies, butter, creams, cakes--all the profusion of an Indian breakfast--were severally of the very best of their kinds.[4]

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[1] Giles, Climate and Health, p. 60.

[2] Tilt, op. cit., p. 72.

[3] Bellew, op. cit., p. 133.

[4] Ibid., p. 255.

This account is borne out in the East India Vade-Mecum:

> A breakfast in India bears a strong resemblance to the same meal in Scotland, with the exception of whiskey . . . The general bill of fare at this time consists of tea, coffee, toast, bread, butter, eggs, rice, salt-fish, kitchery, various sweatmeats prepared in the country, especially preserved ginger, and orange marmalade, honey, &c; and, after hunting or shooting, occasionally cold meat, with proper accompaniments.[1]

After a filling and late breakfast, lunch was a light meal, "a little avant-diner" according to the nineteenth century literature. It was eaten between one and two o'clock and was called tiffin. It consisted of grilled fowls, mutton chops, cold meats, and sometimes spiced soups and curry and rice. Tobacco or cheroots for smoking, as well as beers, wines, and spirits were available in abundance. Figure 6, from Atkinson's Curry and Rice, shows the family gathered at the table for an informal tiffin. If tiffin was considered a light meal, one wonders about the digestibility of the main meal.

The main dinner was eaten after sunset and it was a meal over which one lingered with many glasses of wine and much smoking. In Bengal the hookah was certainly one form of Indian dietry which was widely accepted by the British.[2] A comment on dinner, however, shows it particularly inappropriate for hot weather:

> The dinner was equally remarkable for its goodness and profusion; Chittagong fowls, as big as turkeys, were there, and a saddle of mutton cased with two inches of fat, on which the colonel gazed with as much pride as some tender parent would look on a favourite child.[3]

Perhaps even more than at the large quantities of unsuitable food consumed, medical men spoke out against the popular over-indulgence of drinks. Tilt expressed general medical opinion when he wrote:

> All medical men agree to reprobate the large consumption of stimulants that the national love of drink, thirst, idleness, and languor, too often suggest to our countrymen, as the best way to palliate the inconveniences of an Indian climate. There is no doubt upon my mind, that they take, under one form or another, more alcohol than is good for them.[4]

Figure 7 shows the typical after-dinner scene in the mess-hall. Excess drinking was not limited to army barracks, however. It belonged to what was considered the well-bred society. Tilt continued:

> At any great station throughout India, society is just as exclusive as in any small country town in England . . . The young wife of an officer stationed in the Punjab, tells me that her daily allowance was two pints of bitter ale, half a bottle of sherry, and at night 'a peg'--that is, hot brandy and water, made with a full wineglass of brandy--and this lady assures me that her lady friends at that station were not more abstemious.

Thus it seems that the Englishman, despite advice through the ages, was more prepared to accept the resultant ill-health than to change his customs. The situation can be

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[1] Williamson, op. cit., p. 128.

[2] Note the hookahs in Fig. 7.

[3] Bellew, op. cit., p. 255.

[4] Tilt, op. cit., p. 72.

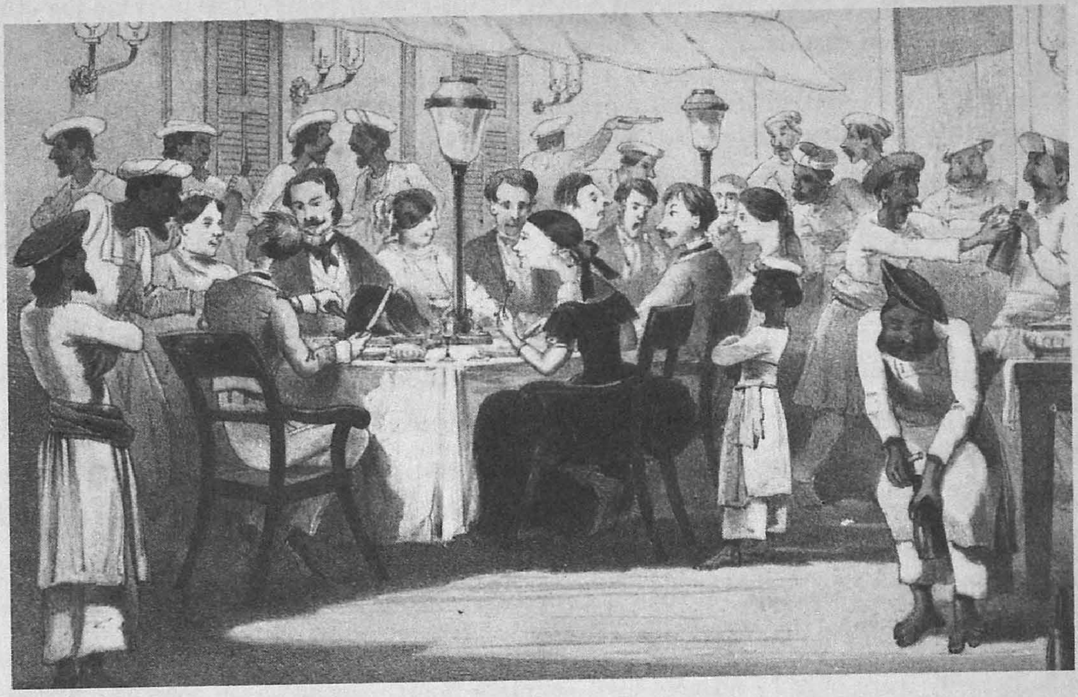

Fig. 6.--The family gathers to an informal tiffin at noon. (Taken from Captain Atkinson's Curry and Rice on Forty Plates.)

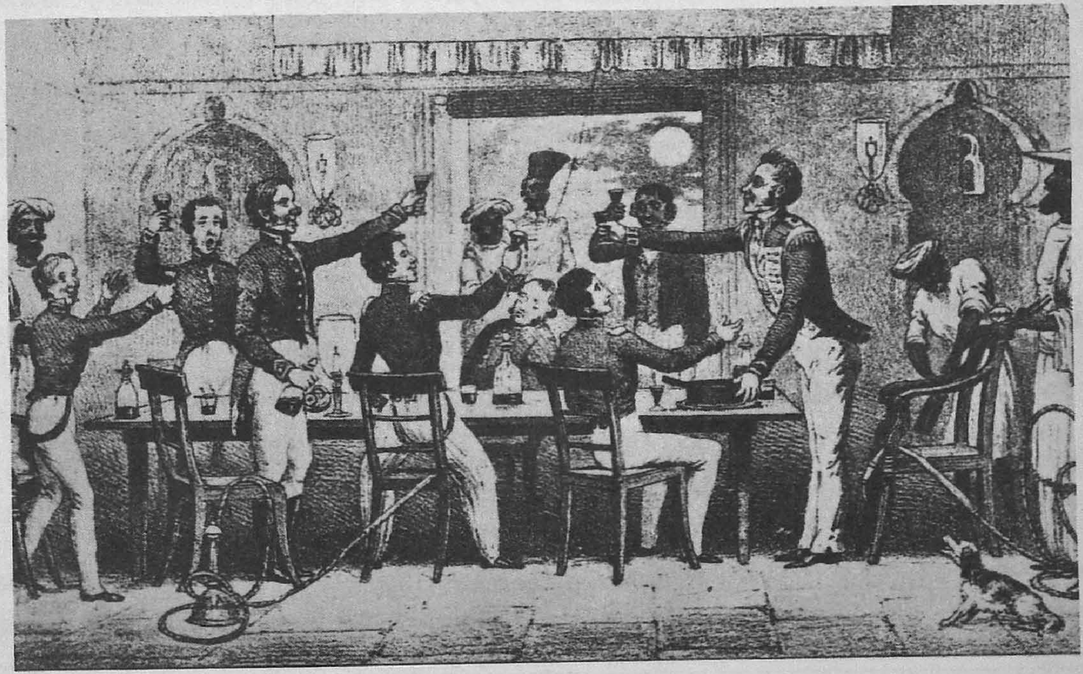

Fig. 7.--A British army barracks mess-hall. Excuses for excessive drinking were frequent. (Taken from Captain Bellew's Memoirs of a Griffin.)

summarized by Tilt's comments: 'If our fellow countrymen could be induced to so modify national habits as to eat and drink less when in India than at home, it would take the sting out of a tropical climate."[1]

Architecture

The discoveries that malarial fever was caused by a parasite and introduced by a mosquito bite were made more than two and a half centuries after the British first gained territories in India. During these earlier years, malaria and other fevers known to be very prevalent throughout India and particularly associated with the Northeast Monsoon period, were associated with damp night airs believed to contain poisonous miasmas. As a result houses were often built with small windows and all doors and windows were tightly closed at night, regardless of the resultant stuffiness. It was expected that a high proportion of deaths resulted when Europeans lived in conditions so adverse from their own suitable comfort zones.

Styles of architecture varied considerably. During the Victorian era some large airy homes, as suitable for the tropics as the current medical and technical knowledge would permit, were built by affluent civil servants in many parts of the country. These rich homes had high ceilings, a British custom which in India allowed for the erection of a punkah, a type of thatched curtain, pulled by night as well as by day by the punkah-wallah, to fan a current of constantly moving air through the room.[2] They contained large verandahs which allowed free circulation of air, at least when they were built. Through the years, unfortunately, with the need for additional accommodation in the course of time, the verandah spaces were often enclosed and the rooms thus cut off from exterior ventilation.

Houses of the less affluent, however, and particularly the barracks for the common soldier, were often regular heat traps. Solid brick outer walls received the direct rays of the sun much of the day and thus often became 40-50°F. hotter than the surrounding air temperatures and continued to radiate out heat long after sundown. Their small high dormitory windows not only shut out the sun, but unfortunately also the light, as well as almost all air ventilation.

A typical barracks mess-hall is seen in Figure 7. The mess was considerably larger than dormitory rooms. No windows are seen in the picture. The door has been left open and it seems to be the sole source of outside ventilation. It is small wonder that mortality rates for heat-stroke were extremely high, and that they frequently happened at night as well as during the hot day.

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[1] Ibid., p. 5.

[2] For pictures of the punkah see Figs. 5, 6, and 7.

One can fully understand that the British soldier after two years of fighting in the Gurkha Wars in the Himalayas, several thousands of feet above the heat of the Indo-Gangetic Plain, became a revitalized being, and that the hill-station idea which developed and grew from such an experience, came to be perceived as the answer to many of the problems of the British living in India.

Actual Health Hazards

Diseases are no respecters of persons or political boundaries. Rather, they have followed the great transport routes from times of remotest antiquity. The combustion engines both speeded travel facilities and accelerated the distribution of diseases. Thus a new era in the history of cholera began in the early nineteenth century when steamships carried the disease into all continents of the world except Australia and Antarctica. With the arrival of the jet air age psychosomatic problems were added to epidemiologic ones as the increased speed of travel allows the traveler little time to adjust to, or even to anticipate, the changes in time, environment, and culture, of the area of his destination.

Nevertheless, specific diseases are encouraged by specific stimuli and they respond differently in different areas of the world. Factors of environment, cultural as well as physical, play an important role in both the stimulation of and the response to disease, and climatic features are often decisive factors in disease ecology. Thus, although it is extremely difficult to offer a succinct definition for the phrase, one can talk generally in terms of tropical diseases.

Pattern of Diseases in the Tropics

The commonest tropical diseases, which are, of course, by no means limited to the tropics, include cholera, malaria, leprosy, smallpox, filariasis, hookworm, typhoid, amoebic and bacillary dysentery. Most are well represented in India, and several are endemic to India. Their distribution and ecology in India are briefly discussed and maps are included, where sufficient data are available.[1]

Cholera

The homeland of cholera is considered to be in India, especially in Bengal and the Ganga delta where swamps and morasses abound. Indian writers of 400 B.C. described epidemics with symptoms which are typical of cholera. It is present permanently in India (see Fig. 8) and India is the site of both recurrent epidemic outbreaks and the endemic focii of origin of such outbreaks. From the end of the eighteenth century, the British garrisons in India lost thousands of soldiers from cholera. Tens of thousands of pilgrims from within India also died of cholera in the eighteenth and nineteenth centuries. Those who lived often spread the disease widely throughout their homelands.[1] It was estimated that religious pilgrimages and fairs in the early twentieth century involved the movement of some twenty million people annually, and the severest incidence of cholera epidemics in India coincided with the Allahabad Kumbh melas (Indian religious festivals) of 1894, 1906, and 1918.[2]

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[1] Source materials for the maps include: Atlas of Disease (New York: American Geographical Society, 1953), and Ernst Rodenwaldt and Helmut J. Jusatz, Welt Seuchen Atlas (Hamburg: Falk Verlag, 1961).

Goode's outline maps have been used as base maps by permission of the Department of Geography, University of Chicago.

The first great Indian epidemic, which started in 1817 in Bihar, became pandemic and spread throughout Asia with the tea caravans. It was followed by four others which spread throughout the world. Since 1911 the disease has largely been arrested. The 1969 returns show that it is now limited to ten geographical areas of Asia, with India and Pakistan producing 88 per cent of the world's total cases.[3]

Rogers, working with the Indian Medical Service in the 1920s, made laborious studies of the monthly mortality returns for cholera in the different provinces of India under British rule, comparing this data with meteorological records. The results showed that there was considerable correlation between temperature and humidity on the one hand, and cholera outbursts on the other, so that principal epidemics could be forecast and their spread, thus, to some extent be controlled.[4] During the first fifty years of the twentieth century, the annual cholera deaths recorded in India have been limited to five-figure numbers only eight times: the other 42 years showed death totals in the six-figure range, the highest being 805,698 in 1900.[5]

As cholera is largely a consequence of unwashed hands and contaminated well-water, its epidemics have cultural as well as climatological causes. Sanitation is, of course, as

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[1] F. Henschen, The History and Geography of Diseases (New York: Delacorte Press, 1967), p. 70.

[2] Leonard Rogers, The Incidence and Spread of Cholera in India: Forecasting and Control of Epidemics, Indian Medical Research Memoirs, No. 9 (Calcutta: The Indian Research Fund Association, 1928), pp. 190-92.

[3] "Cholera Today," editorial, Lancet, II (July, 1969), 195-96.

[4] Leonard Rogers, Recent Advances in Tropical Medicine (Philadelphia: P. Blakiston's Son & Co., 1928), pp. 174-75.

[5] S. Swaroop and R. Pollitzer, "World Distribution of Cholera Endemicity," Epidemiology and Vital Statistics Report, World Health Organization, Publication No. 5 (Geneva, 1922), p. 571.

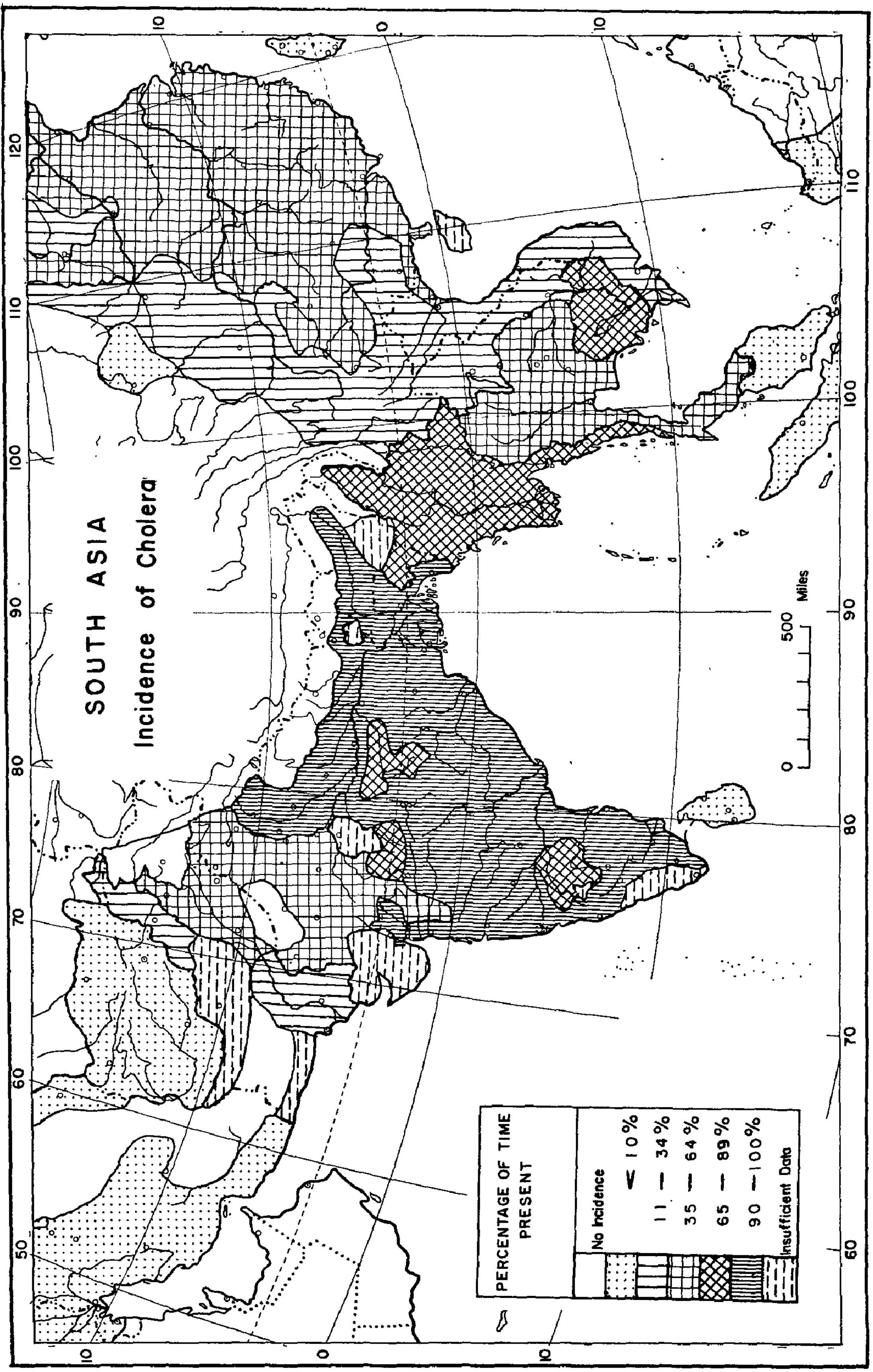
SOUTH ASIA
Incidence of Cholera
PERCENTAGE OF TIME PRESENT
No Incidence
< 10%
11 — 34%
35 — 64%
65 — 89%
90 — 100%
Insufficient Data
0
500
Miles
50
60
70
80
90
100
110
120
10
0
10

Fig. 8

much a problem at higher elevations as on the plains, yet cholera incidence has always been rare in Indian hill-stations. In 1883, Hirsch, reporting in detail on the first great cholera epidemic noted:

> At the very first general diffusion of cholera in India in 1817-1819, medical observers had their attention directed to the fact that the hill-forts remained exempt in a remarkable way, while the disease was prevalent in the plains round about, and that the removal of troops from an infected district to an elevated station, without any separation of the sick from the healthy, was followed by a speedy disappearance of the disease from among them.[1]

At the height of the epidemic in 1856, cholera did cross the mountain ranges into Nepal. It had appeared in the Kasauli military camp at 6,000 feet, near Simla in 1845, showing that elevation per se did not necessarily secure immunity from the disease.

> But cases of that kind belong to the rare exceptions. Usually under such circumstances, the disease has found only a slight diffusion; the amount of sickness has almost always diminished in proportion to the height to which cholera has ascended above the plains, and it has been quite common for elevated points to remain almost or altogether exempt, in spite of numerous imported cases.[2]

Malaria

The story of malaria dates back to prehistoric times. As malarial parasites have been found in reptiles of which some of the lizard varieties are thought to have existed for 200 million years, it has even been speculated that malarial infections may have played a part in the evolution of birds and mammals.[3] Though the humid tropics create excellent breeding areas for anopheline mosquitoes, especially in areas of heavy rains and impervious soils, malaria is not limited to the tropics. In various past eras, notably in the Middle Ages and during the two recent world wars, it was prevalent in many parts of Europe. Historians often point to it as a possible cause for the collapse of the ancient Roman Empire. Between 1917 and 1921 there were 500 indigenous cases of malaria in the British Isles, and there was even an outbreak in the vicinity of Archangel, within the Arctic Circle in Russia.[4] The only areas completely safe from mosquitoes are true deserts without even a short rainy season in which the larvae can breed.

India has many varieties of malarial mosquitoes (see Figs. 9 and 10) and as late as the 1930s malaria was still considered India's main disease, with the number of sick esti-

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[1] A. Hirsch, Handbook of Geographical and Historical Pathology, I (London: The New Sydenham Society, 1883), 440.

[2] Ibid., pp. 441-42.

[3] G. Covell, "The Story of Malaria," Journal of Tropical Medicine and Hygiene, LXX, No. 12 (1967), 281.

[4] Ibid., p. 282.

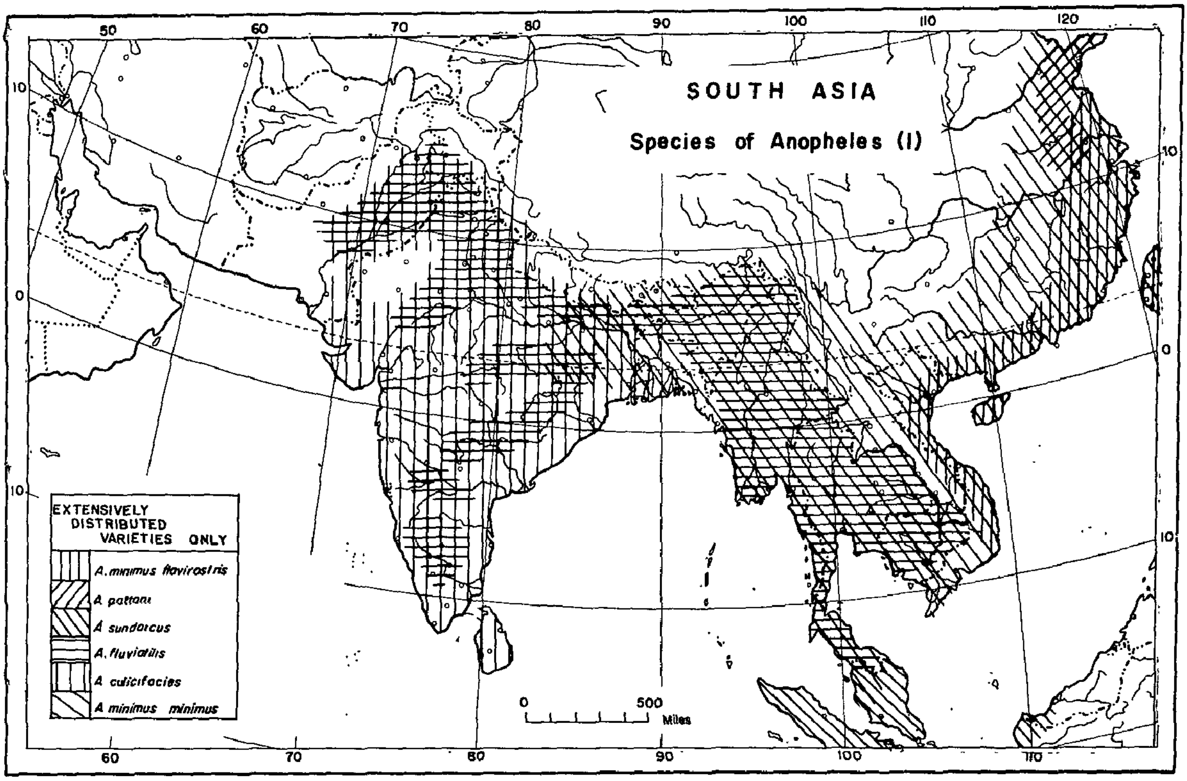
SOUTH ASIA
Species of Anopheles (I)
EXTENSIVELY DISTRIBUTED VARIETIES ONLY
A. minimus flavirostris
A. pattoni
A. sundaicus
A. fluviatilis
A. culicifacies
A. minimus minimus
0
500
Miles
50
60
70
80
90
100
110
120
10
0
10

Fig. 9

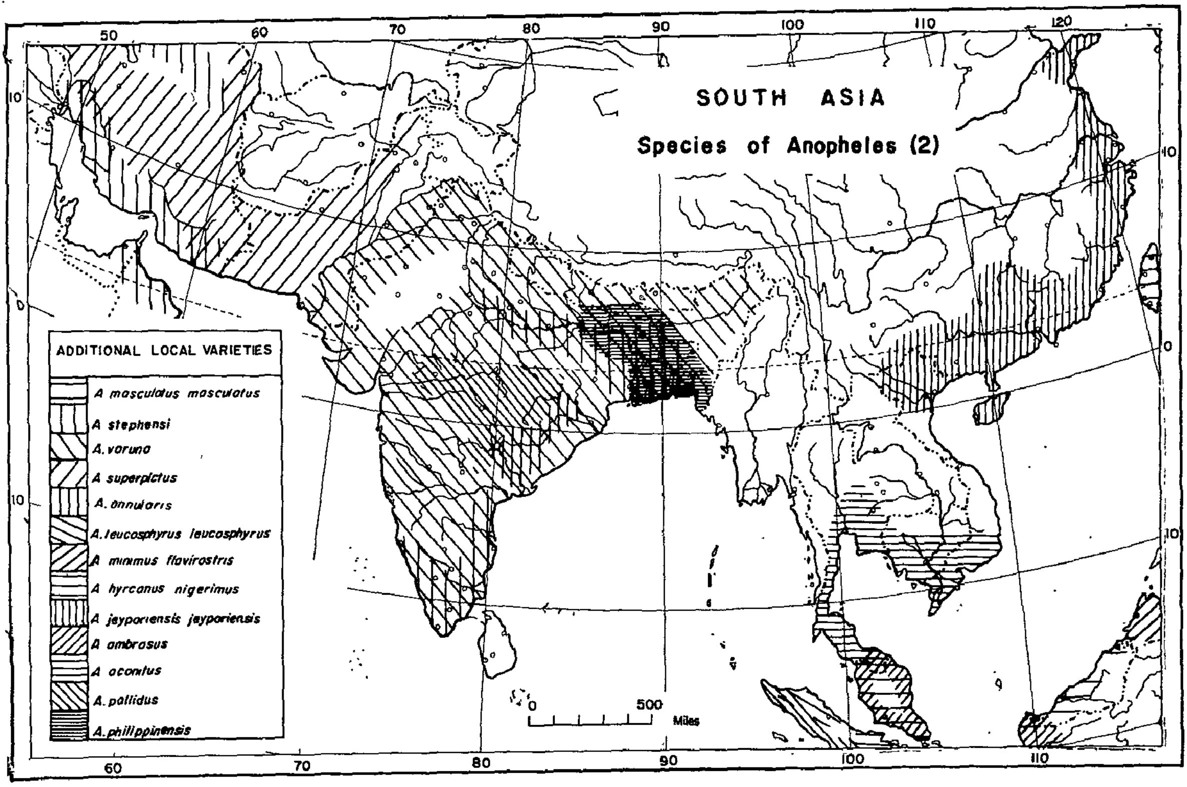
SOUTH ASIA
Species of Anopheles (2)
ADDITIONAL LOCAL VARIETIES
A maculatus maculatus
A stephensi
A. varuna
A superpictus
A. annularis
A. leucosphyrus leucosphyrus
A minimus flavirostris
A hyrcanus nigerimus
A jeyporiensis jeyporiensis
A ambrosus
A aconitus
A. pallidus
A. philippinensis
0
500
Miles
50
60
70
80
90
100
110
120
10
0
10

Fig. 10

mated at 13 million and the death rate as high as 4 million per year.[1] Writing in 1904, Giles pointed out to Europeans preparing to settle in India:

> The especial danger against which we have to guard is always that of malaria, and hence, in choosing the site for a house the great point is to select one which is, as far as possible, free from natural or artificial collections of water . . . The neighbourhood of jungle, and even of trees, should be as far as possible avoided, for trees undoubtedly harbour mosquitoes, and their presence is generally equivalent to that of malaria.[2]

In the northwestern Punjab and upper Ganga region with intensely hot summers and cool winters, malaria is rife from August to November, the more virulent type often occurring in the drier northwest. In the middle and lower Ganga and Assam, where the weather is humid except during March and April, malaria is prolonged and often severe. In the dry areas of Gujarat and the Central Deccan, malaria is moderate with two distinctive maxima. In South India's more uniform and moist climate there is no marked malaria-free season, but seldom is the disease especially severe.[3]

In 1955 the Eighth World Health Assembly of the United Nations adopted the policy of world-wide eradication of malaria, and by far the largest program to be put into operation was that of India. Training facilities were established and a comprehensive plan for its control throughout the whole sub-continent was organized when the program was launched in 1958.[4]

Many species of Anopheles can live quite high up in the mountains, but the higher-altitude Indian hill-stations are generally not malarious. Gill, in 1923, studied the altitudes at which malaria-carrying mosquitoes breed in the Himalayas, and he found no lack of them from 6,000 to 8,000 feet elevation at hill-station sites. The hill-stations, however, were nevertheless quite free from the disease.[5] Summarizing recent studies on malaria and altitude in India, May wrote in 1961: "As a rule, above 5,000 feet no malaria was found."[6] Already in 1907 Sandwith had commented:

> The climate of all the more elevated stations is delightful during the spring months, and most of them are quite free from malaria, though . . . species [of Anopheles] are usually to be found. Cases recovering from malaria are greatly and immediately benefitted by change to heights.[7]

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[1] Henschen, op. cit., p. 142.

[2] Giles, Climate and Health, pp. 1-2.

[3] The distribution is described from the table in G. M. Giles, Outlines of Tropical Climatology (London: John Bale, Sons, & Danielsson, Ltd., 1904), pp. 56-57.

[4] Covell, op. cit., p. 285.

[5] Quoted in Rogers, Recent Advances, p. 63.

[6] Jacques M. May, Studies in Disease Ecology (New York: Hafner Publishing Co. Inc., 1961), p. 214.

[7] Sandwith, op. cit., p. 362.

Speaking of Kodaikanal in South India, he claimed:

> The climate is a fine tonic to most convalescents; and though fever is often imported by natives from the lower slopes, it never spreads to residents. In lay language, the settlement (at 7,300 feet) has long been known as 'above fever range'. In old days this meant that the height protected it from the supposed malarial miasma, and today it means a dearth of malaria-bearing mosquitoes.

Leprosy

Incidence of leprosy is by no means limited to tropical lands. In 1958 May listed the known and estimated cases present in all countries of the world for which reliable data are available. His table showed 135 countries, including all continents, some with cool climates.[1] Leprosy has always been widespread as far as one can surmise from historical documents, and despite all efforts to control the disease, the present-day problem has become one of huge dimensions showing an increase over the past two decades from five million in 1946, to fifteen million in 1965. Its greatest incidence now is in tropical lands with India taking the lead through its 1.7 million estimated lepers.[2] Mills blamed its present status to climate:

> Leprosy is now in the main a tropical disease, being unable to maintain itself in the more stimulating regions of the earth. In the cooler portions of the temperate zones it tends to become quiescent, non-contagious, and of little moment. Particularly impressive was the failure of the disease to gain a foothold in and around Minnesota after many scores of cases had been imported there from Scandinavia . . . Only in the tropics does it go on from decade to decade, with little apparent regard for man's efforts at eradication.[3]

In 1950 Rogers thought that the prevalence of leprosy in hot and humid regions was due to the many abrasions of the skin so prevalent in countries where insects cause innumerable bites. If this is true, it might explain why areas of highest incidence coincide with hot and humid climates. The milder character of the disease in these areas, in turn, could be explained by more frequent exposure. In Calcutta, Lowe and Chatterji found a correlation between the high temperatures and low humidity of northeast India from March to May, and increased bacterial activity which stops abruptly with the onset of the rainy season in June.[4]

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[1] Jacques M. May, The Ecology of Human Disease (New York: M.D. Publications Inc., 1958), p. 145.

[2] Compare this figure with the next two highest estimates: China, 1 million and Nigeria, 400,000. For the distribution of leprosy in South Asia, see Fig. 11.

[3] C. A. Mills, Medical Climatology (Springfield: Charles C. Thomas, 1939), pp. 152-53.

[4] J. Lowe and S. N. Chatterji, "Seasonal Variations in Leprosy in Calcutta," International Journal of Leprosy, VII, No. 2 (1939), 137-48.

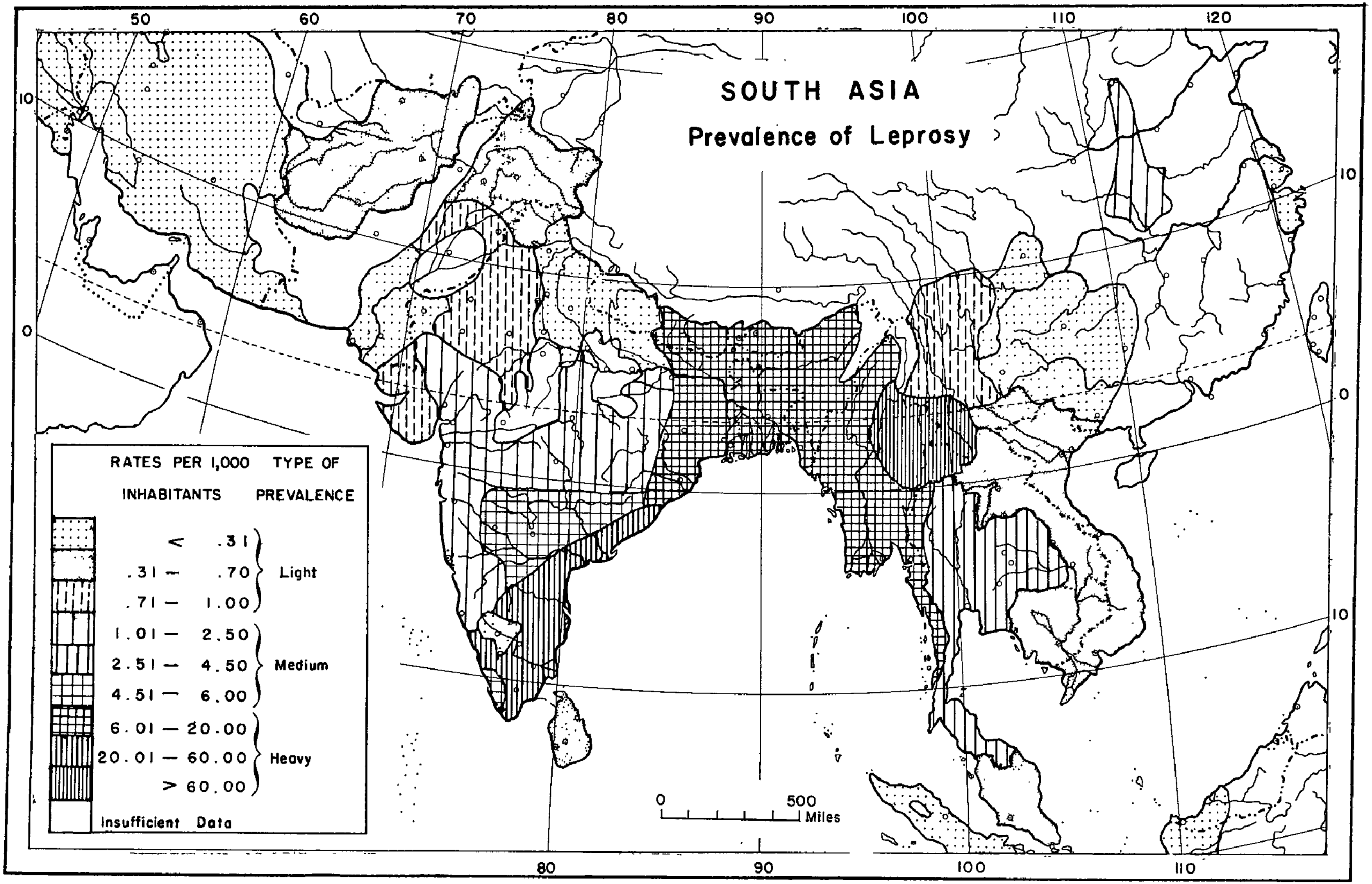
SOUTH ASIA
Prevalence of Leprosy
RATES PER 1,000 INHABITANTS
TYPE OF PREVALENCE
< .31
.31 — .70
.71 — 1.00
Light
1.01 — 2.50
2.51 — 4.50
4.51 — 6.00
Medium
6.01 — 20.00
20.01 — 60.00
> 60.00
Heavy
Insufficient Data
0
500
Miles
50
60
70
80
90
100
110
120
10
0
10

Fig. 11

Though the Indian Leprosy Commission as early as 1890-91 found incidence of the disease among natives in the Himalayas including the Kashmir, Kangra, Kulu, Chamba, and Simla areas, all of which contain hill-stations, there seems to be generally a considerably lower incidence of leprosy in the hill-stations.[1] Mills likened the hills to temperate Europe when he claimed:

> Within the tropical regions, relief from moist heat effects, such as can be obtained at mountain elevations about 5,000 feet, also results in a lessened incidence of leprosy . . . Even in the tropics it becomes distinctly more mild at higher altitudes where the climate is more invogorating. Its tendency in these regions where it is less prevalent, is to go over to the more chronic neural, anaesthetic type, and to be less contagious.[2]

Smallpox

In 1883 Hirsch claimed that the native focus of smallpox was in India,[3] and as early as 1767 Holwell had discovered:

> that immemorable traditions have existed in the Brahmin caste concerning the prevalence of smallpox in India, that there has existed there since the earliest times a deity whose protection and help was invoked on the epidemic outbreak of the disease, and that there is contained in the Artharva Veda a description of this temple service with prayers used by the Brahmins at the innoculation with smallpox, which has been practised there from time immemorial.[4]

Rogers in his exhaustive studies of smallpox incidence and meteorological factors of the fifty-year period from 1875 to 1925, discovered certain correlations between the disease and its ecology in India. First, in the more humid tropical south the incidence is fairly uniform from year to year and from season to season. Secondly, in western and northern areas strongly affected by the southwest monsoon, there is a high incidence of the disease following a monsoon failure, and a sharp drop seasonally in mortality rates once the rains start in June. As a result of his observations he was able to predict epidemics two or three months ahead of their arrival.[5]

The important criterion for the incidence of smallpox, however, is cultural rather than physical. In the great majority of nations where vaccination, since Jenner's cow-pox discovery in 1796 (rather than the older form of variolation) has been practised with regularity, there has been little incidence of smallpox. In recent years 58 per cent of all cases

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[1] F. G. Clemow, The Geography of Disease (Cambridge: University Press, 1903), p. 214.

[2] Mills, op. cit., pp. 153-54.

[3] Hirsch, op. cit., I, 127.

[4] Holwell, Account of the Manner of Innoculating for the Smallpox in the East Indies (London, 1767), p. 8. Quoted in Hirsch, op. cit., p. 125.

[5] Leonard Rogers, Smallpox and Climate in India: Forecasting of Epidemics, Special Report Series, No. 106 (London: Medical Research Council, 1926), pp. 19-22.

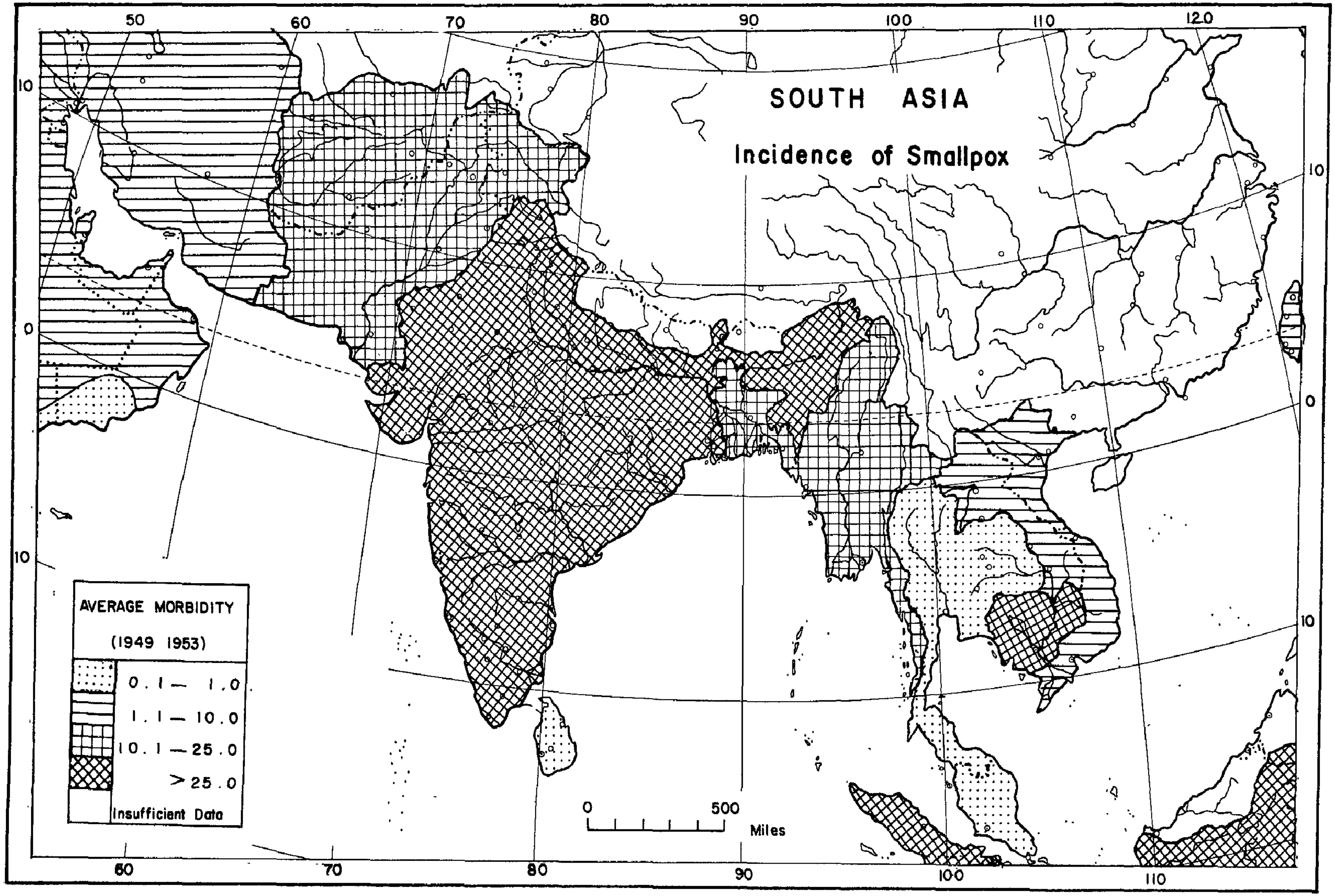
SOUTH ASIA
Incidence of Smallpox
AVERAGE MORBIDITY
(1949 1953)
0.1 — 1.0
1.1 — 10.0
10.1 — 25.0
> 25.0
Insufficient Data
0
500
Miles
50
60
70
80
90
100
110
120
10
0
10

Fig. 12

in the world were reported by India and Pakistan.[1]

Although smallpox shows a high degree of indifference to physical conditions of temperature, rainfall, soil, or altitude, it has, on the whole, been less prevalent at hill-stations than elsewhere in India. This is probably because these resorts are generally more remote, used on a seasonal rather than a permanent basis, and visited largely by a vaccinated clientele. But when the disease does come, it brings with it a disastrous epidemic, at least among the native peoples, as noticed in the Nilgiris in 1829 and 1861.[2]

Nematode Diseases

Of the great varieties of worms found both within and beyond the tropics, which are known to be human parasites, the two which create the greatest disturbances are the filariae, affecting some 189 million people, and the hookworms affecting 456 millions.[3]

Filariasis

Filariae are slender thread-like nematoid worms, that as adults are parasites in the blood stream or tissues of mammals and as larvae develop in biting insects, such as mosquitoes. Filariasis diseases have a broad distribution throughout tropical areas and several varieties of filariae occur as human parasites. In 1961 Kessel differentiated between nine distinct types of these worms.[4] The one with the widest world spread, including also India, is Wuchereria bancrofti, named after its discoverer in 1876. It is especially prevalent in India, where the greatest endemic areas are the river valleys of Bengal and Orissa and the western Coastal plains (see Fig. 13). Here considerable percentages of common mosquitoes become capable of infecting human beings over long periods of time.

It appears that temperature plays a key role in the incidence of filariasis. During the slave trade it was introduced into both the southeastern United States and into the tropical Caribbean. In the Caribbean, mosquito transmission occurred all year round and high microfilarial rates with much elephantiasis developed. On the mainland, however, with its cooler winters, filarial infection rates were light and the focus finally died out.

In India filariae are restricted to lowlands, and usually to coastal plains. The hill-stations are quite free from filariasis.

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[1] Z. Deutschmann, "The Ecology of Smallpox," in May, Disease Ecology, p. 4.

[2] Hirsch, op. cit., I, 132.

[3] May, Disease Ecology, p. 231.

[4] J. F. Kessel, "The Ecology of Filariasis," in May, Disease Ecology, pp. 44 and 52.

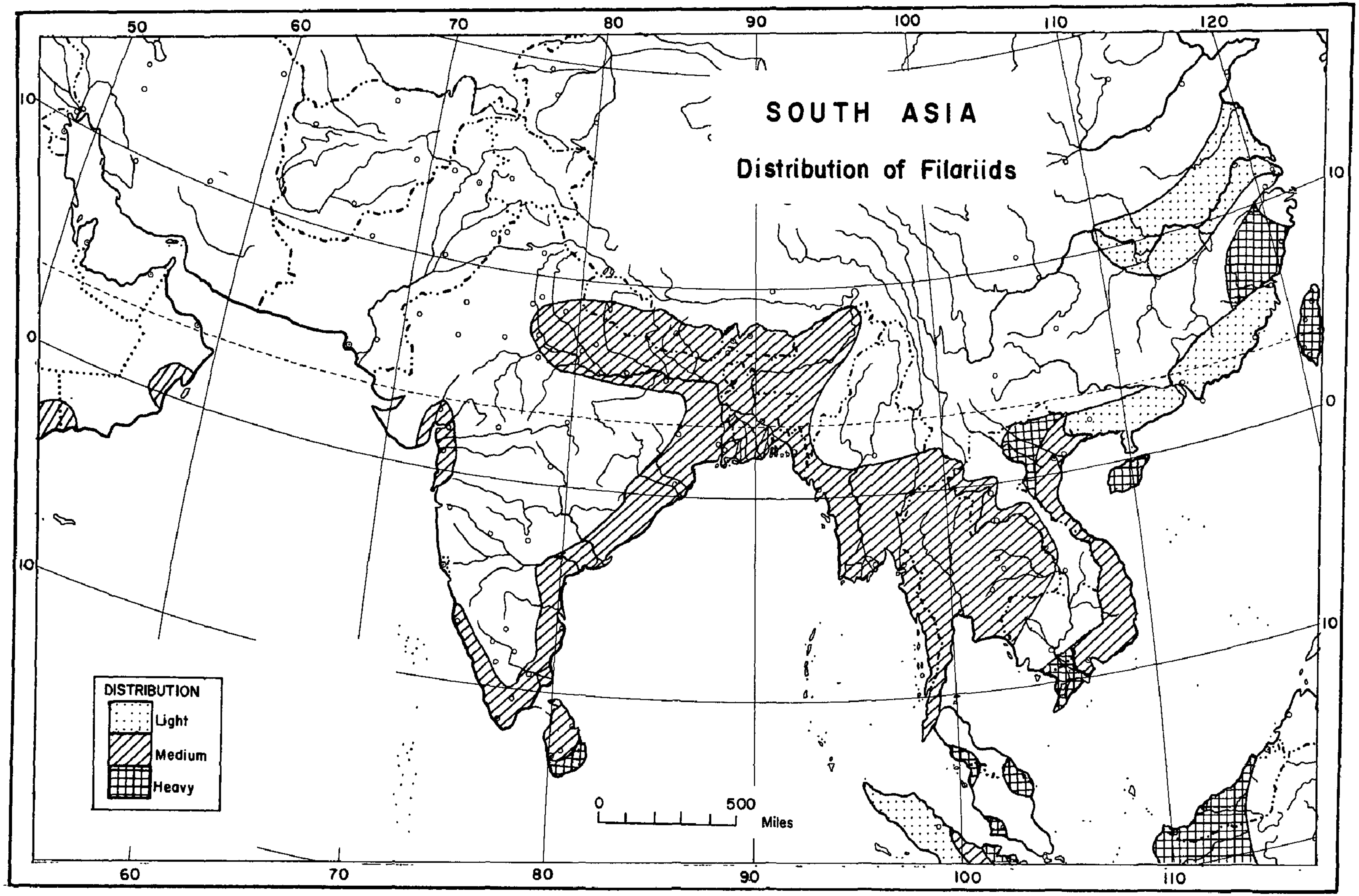
SOUTH ASIA
Distribution of Filariids
DISTRIBUTION
Light
Medium
Heavy
0
500
Miles
50
60
70
80
90
100
110
120
10
0
10
60
70
80
90
100
110
10
0
10

Fig. 13

Hookworm (Ancylostomiasis)

There are two major varieties of hookworm, Ancylostomum duodenale and Necator americanus. Both have probably caused disease since antiquity, but they were identified only comparatively recently, the former in 1843 and the latter shortly after the turn of this century.[1] It is estimated that approximately 500 million people are affected, though some may be carriers and not necessarily very ill. The larvae live in damp earth and in dirty food or water. They are either directly absorbed through the mouth with the food, or they perforate the skin of people walking through infested areas. The larvae require high temperatures, especially for their first development in the soil, and thus the disease is especially prevalent in the warm, moist tropics, with the heaviest incidence coinciding with the densest populations. In India the hookworm complex is widespread and local conditions influence its rate of prevalence (see Fig. 14). In 1926 Chandler made an exhaustive study of its distribution in India, and as conditions have altered little since then, especially in outdoor defecating habits, his findings are probably as applicable today.[2] As one would expect, the heavily infected areas, i.e. 70-80 per cent of the population, are along both the east and west coasts, the plains of the lower Ganga, and the valley of Assam. The dry areas of Rajasthan are almost unaffected. The damp foothills of the eastern Himalayas which have south-facing slopes with relatively warm soils, offer favorable conditions and 66 per cent of the tea estate workers on the lower Darjeeling plantations were found to be infected in 1917.[3]

Because of their cool air and thus relatively cool soil temperatures, the high-altitude hill-stations are free from the disease.

Typhoid and Paratyphoid Fevers

The agents of typhoid and paratyphoid fevers belong to the Salmonella group of which there are four main species, all of them found almost exclusively in man. Although there are descriptions of diseases which may well have been typhoid in the Hippocratic Collection and other records of ancient times, the disease was differentiated from typhus by Jenner only in the mid nineteenth century. Paratyphoid bacilli were isolated as late as World War I. In recent years many subtypes have been discovered and an international scheme for enteric phage typing has been set up. As expected, India has a rich share of

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[1] A. Dubois and L. Van den Berghe, Diseases of the Warm Climates (New York: Grune and Stratton, 1948), p. 229.

[2] A. C. Chandler, "The Prevalence and Epidemiology of Hookworm and Other Helminthic Infections in India," Indian Journal of Medical Research, XIV, No. 2 (1927), 451-80.

[3] Rogers, Recent Advances, p. 278.

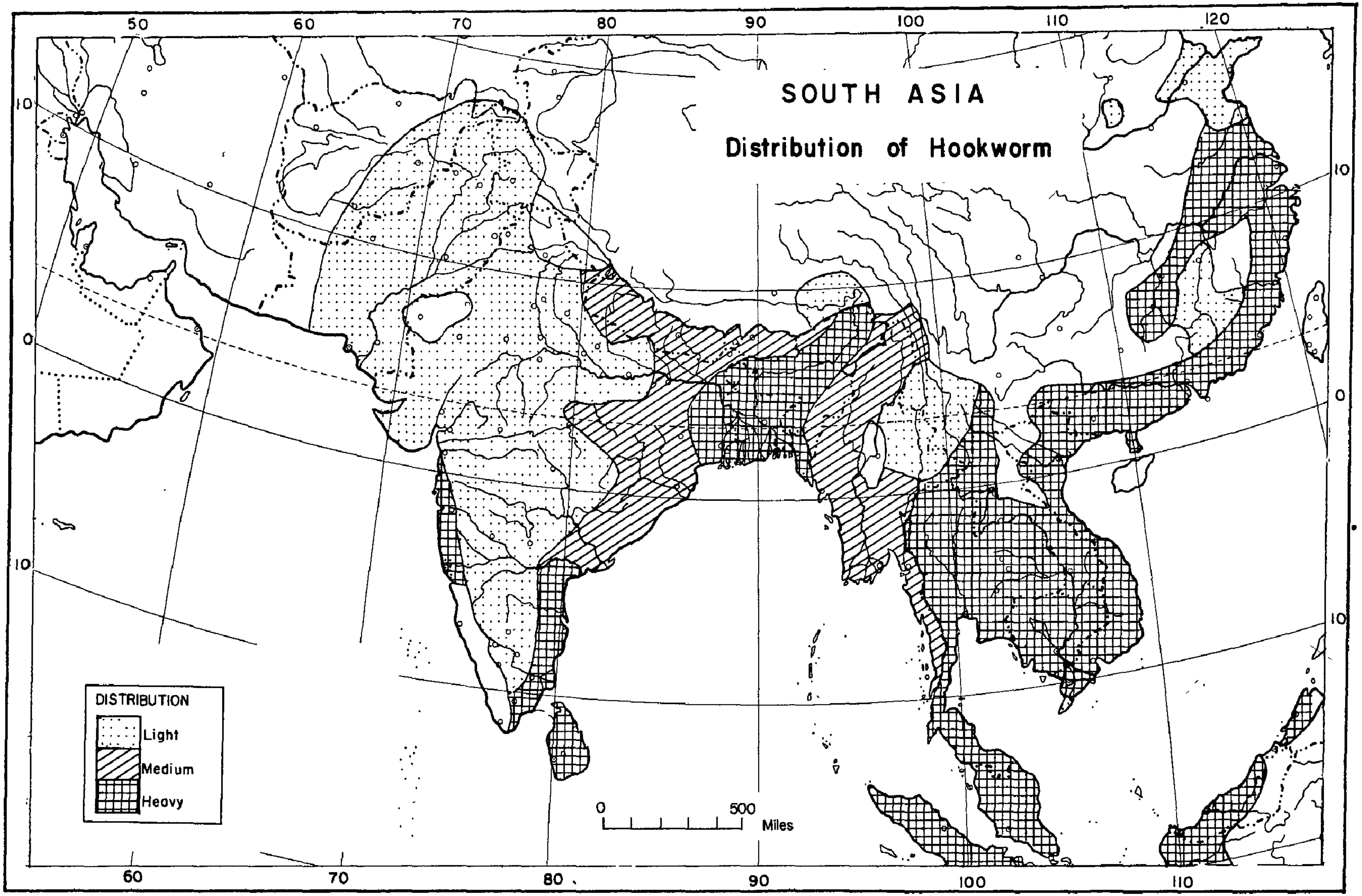
SOUTH ASIA
Distribution of Hookworm
DISTRIBUTION
Light
Medium
Heavy
0
500
Miles
50
60
70
80
90
100
110
120
10
0
10
60
70
80
90
100
110
10
0
10

Fig. 14

both common and rare types. The five countries with the highest number of strains are listed in Table 1.[1]

TABLE 1

DISTRIBUTION OF PHAGE TYPES AMONG STRAINS OF S. PARATYPHI A

Strains Isolated in	Number of Strains						
	Type 1	Type 2	Type 3	Type 4	Untypable	Degraded	Total
1. India	240	61	2	1	53	5	362
2. Egypt	31	3	-	44	10	2	90
3. U.S.A.	22	1	-	-	2	4	29
4. Israel	17	4	1	1	1	3	27
5. Italy	7	4	0	-	-	1	21

The actual average incidence of typhoid and paratyphoid in the above five countries with the mortality percentages is shown in Table 2.[2]

TABLE 2

AVERAGE INCIDENCE OF TYPHOID AND PARATYPHOID

Country	Years from Which Average Has Been Computed	No. Cases	Mortality
Israel	1943-1949	1,000	3 %
U.S.A.	1943-1949	4,000	3 %
Egypt	1943-1949	5,000	10 %
Italy	1943-1949	50,000	6 %
India	1938-1947	102,000	82 %

The Salmonella microbes are transported in polluted water and they can survive longer in cold than in hot temperatures. Thus typhoid is by no means basically a tropical disease; cultural rather than physical conditions play predominant roles in the present distribution of the disease as it is the non-tropical Western world where the greatest efforts have been made with regard both to sanitation and to innoculation. Of the physical factors which contribute to the incidence of the disease, the most important is soil, as the soil governs the dispersion of rain, surface, and ground waters. The pollution of ground water depends to a large extent on the quantity and type of soil filtering the rain and surface water. With a shallow depth of coarse-grained soils, irrigation and well waters are easily infected, especially in India, where the norm is an open sewage-latrine system.

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[1] May, Ecology of Human Disease, p. 174.

[2] The figures for Israel, U.S.A., Egypt, and Italy have been obtained from May, Ecology of Human Disease, pp. 178-84. Those for India from Henschen, op. cit., p. 74.

Hill-stations in India can certainly be as easily affected as other sites, and typhoid has frequently occurred in them. Giles, at the beginning of the century, claimed that "typhoid fever is endemic in almost all hill-stations."[1] However, it is interesting to note that in figures given for typhoid fevers among British troops in Indian cantonments between 1886 and 1897, there was a far smaller average incidence and death rate in cantonments which were hill-stations.[2] The hill-station certainly has an advantage in that seldom are local villages located at an altitude above the station's reservoirs, and thus there is a greater possibility of the main drinking-water supplies remaining uncontaminated. Furthermore, European-type schools and army barracks located in hill-stations have introduced regular innoculation programs.

Dysentery

Dysentery has long been among the severest of man's epidemic diseases. Dysentery-type intestinal diseases were described on Egyptian papyri and it is said that the god Horus, son of Isis and Osiris, once sickened from it.[3] Good accounts of it are found in the Hippocratic Collection, where dysentery was already differentiated from the closely related diarrhoea, and references to it in the compendia of Arabian and Medieval practitioners show how important and widespread a disease it has been throughout time. Hirsch agreed with a medical comment of his day, written in 1860: "Of dysentery it may be said that where man is found, there will some of its forms appear." Nevertheless, he also found a clear relationship between climate and dysentery:

> After the malarial fevers and yellow fever, there are no diseases so clearly dependent on climatic influences for their diffusion over the globe as dysentery and diarrhoea. As endemics they occur to the greatest extent in those parts of the world where the tropical character of the climate is most decidedly marked. In higher latitudes their endemic property becomes less and less conspicuous.[4]

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[1] Giles, Climate and Health, p. 80.

[2] Clemow, op. cit., p. 479.

[3] Henschen, op. cit., p. 75.

[4] This and the following quotations and statistics are found in Hirsch, op. cit., II, 286, 326, and 293-96.

Of evidence in India he wrote:

> In India, as all observers agree and all statistics bear out, dysentery and diarrhoea hold the first place among the causes of death, producing a very high absolute mortality, or at all events a chronic cachexia which leads sooner or later to death in a direct or indirect way.

Figures collected between 1826 and 1872 from Indian Army Medical Reports show that in all three British territories, Bengal, Madras, and Bombay, the admissions of dysentery cases into hospital remained between 93 and 205 per 1,000 annually, the average for the entire force being 121 per 1,000 with a 7 per cent death rate.

As late as the 1904 editions of Manson's standard medical text Tropical Diseases, dysentery was described as a single disease which might possibly include a group of infections. In his later edition of 1907, however, Manson clearly differentiated between amoebiasis and bacillary dysentery as the two chief forms of dysentery, and since then various sub-types of each have been isolated. Like many diseases closely connected with careless sanitation and lack of hygiene, both dysenteries are now found predominantly in the tropics.

Amoebiasis

There are many types of protozoa in the family Amoebidae, but it is only one species, histolytica, of the genus Endamoeba which is the causative agent of amoebiasis. Other species, though parasites of man, are apparently harmless as they cause no detrimental change in the tissues of their host. The disease is received when the parasite in cyst form is swallowed by man. The infecting cyst may be transmitted to the host through sewage-contaminated water supplies, raw vegetables and fruit grown on night-soil fertilizer, by swallowing any type of food or drink contaminated by cyst-bearing flies or cockroaches, or perhaps monkeys, or through the unwashed hands of fruit handlers.

There seems to be a high incidence of amoebiasis among visitors to tropical areas, which might be explained by a lowered resistance due to irritations of the intestinal mucosa caused through irritating foods such as hot spices, tropical fruits, or excessive quantities of alcohol, a condition which simultaneously creates an ideal environment for attack by the parasites.[1] In India, Giles long since associated attacks of dysentery among Europeans, with exposure of the abdomen to the relatively chilly air of the early morning temperature drop, after clothing and covering have been tossed off or rumpled up during the hot sleepness night.[2] Since the days of electric ceiling fans drafts at this hour are much more likely to cause chills.

With regard to the distribution of amoebiasis in India, it is not possible to give accurate figures or maps as the two dysenteries and diarrhoea are not differentiated in the medical reports. This may partially be because of the difficulty of accurate diagnosis especially as both dysenteries may well be present at the same time. In 1958 May suggested:

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[1] May, Ecology of Human Disease, pp. 190-92.

[2] Giles, Climate and Health, p. 145.

> In view of the repeated contacts that the Indian way of life provides with potentially contaminated material, it would not be unreasonable to say that at some time of their lives the mass of the Indian population has in totality been affected by E. histolytica . . . There is at least one carrier in every family.[1]

Bacillary Dysentery

Bacillary dysentery implies dysfunction of the intestines caused by any one of a large variety of organisms of the genus Shigella. They cause damage to the intestinal mucosa to the extent that essential tissues are jeopardized and death follows frequently if treatment is not undertaken.

As early as 1928, Rogers, who had done much study on the two dysenteries in India, pointed out that large-scale epidemics of dysentery are essentially bacillary in nature. Even localized outbreaks such as attacks in two or three children in the same household, are nearly always acute bacillary cases. The bacillary type also has a more definite seasonal incidence. Studies were made of dysentery attacks in Indian jails, of which almost 90 per cent were analyzed as bacillary. Its minimum prevalence was found to be in the cooler drier weather of January and February. There was a slight rise with warmer weather in March, but a drop in the hottest months of May and June. The maximum prevalence was during the rainy season, apparently varying locally with the distribution of the rains. These studies were followed up with careful fly counts and the correlation between fly densities and dysentery were consistently high, more so than correlations between the dysentery and any factors of weather conditions.[2]

As with amoebic dysentery, it is not possible to map its distribution in India because causes of death are listed generally as dysentery and the diarrhoeal syndrome in India is extremely difficult to ascribe to its true cause. Although the dysentery can be easily transmitted without any vector, by direct contact with soiled garments of the sick, or contaminated food and water, the domestic fly certainly seems to speed up transmission. As with amoeba one eats or drinks bacillary dysentery; cultural factors in India make this extremely easy.

Although it is apparent that both amoebiasis and bacillary dysentery thrive more easily in the tropics than in temperate zones which have a predominant cold season, the relatively cool weather at hill-stations does not, unfortunately, give immunity from either dysentery. There is, in fact, a type of dysentery which seems peculiar to the hills, claimed to be similar in its effects at hill-stations in the Himalayas, the Western Ghats, and the north Deccan ranges. In the past it was known as "hill-diarrhoea" or "white flux."[1] There is a possibility that this may be the result of a change in the response by a host to previous invasions of amoeba because of sudden changes in diet, water, and weather conditions upon reaching the hills, as much as to *infections received at the hill-station itself.* Tilt, in 1875, dissociated this hill-diarrhoea entirely from dysentery parasites, associating it with chills caused by diurnal temperature changes. He also claimed a lessened incidence of dysentery at hill-stations:

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[1] May, Ecology of Human Disease, p. 210.

[2] Rogers, Recent Advances, pp. 195-96.

> Although there be a comparative immunity from cholera, malaria, dysentery and sun-stroke in the hills . . . There is a very troublesome 'hill diarrhoea' that seems to depend on the intestinal mucous membrane having been so long accustomed to a uniform high temperature, that it resents being subjected to daily variations of temperature that in Himalayan stations may extend to 30° to 40° F. If this tenesmic and flatulent diarrhoea depended on the drinking water contaminated by sewage, the complaint would not be cured by returning to the plains.[2]

Thus with regard to the distribution of the tropical diseases briefly discussed above--cholera, malaria, leprosy, filariasis, hookworm, and to some extent smallpox, typhoid, and even the dysenteries--there has been evidence of a less severe or less prevalent incidence, and often a total absence of, the disease at the higher hill-station elevation.

Debilitating Physical Effects of Heat

As well as the question of diseases resulting from parasites, the matter of sickness caused by heat also requires consideration. Changes of temperature, especially from cool or cold to moist heat, require corresponding physiological adaptations by those undergoing the changes. This was understood long since. Moseley wrote in 1787:

> . . . and experiments have shown that the human frame can bear far greater degrees of heat than any climate produces, without injury: and that cold alone can be sustained without destroying life, even when some of its functions have been suspended for a considerable time. But it is the transitions from one to another, which are so annoying to human nature.[3]

If the body is unable to adapt to the changes disease will result. Such diseases include heat-stroke or sun-stroke which may speedily result in death through asphyxia, heat-exhaustion often accompanied by heat-cramps, or some form of tropical fatigue which may imply psychological as well as physiological disturbances. The extent to which the body can change seems to be related in some degree to the speed at which the adaptations must take place. It has long been recognized that a period of acclimatization enables a person to endure conditions which at first were untenable. According to the severity of the necessary change, such acclimatization may take a few days, years, or generations. The term, to acclimatize, from the Greek klima meaning slope and implying the slope of the ground to the angle of the sun in the sky, took on its present meaning in the seventeenth century. In Moryson's Itinerary of 1601 the term used was seasoning.

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[1] Hirsch, op. cit., III, 295 and 341.

[2] Tilt, op. cit., pp. 17-18.

[3] Benjamin Moseley, A Treatise on Tropical Diseases (London: G. G. and J. Robinson, 1787), p. 42.

Even after acclimatization, however, there are conditions, varying to some extent from person to person, which cause loss of efficiency. In recent years considerable efforts have been made to discover under what conditions of heat and humidity the ordinary human being, whether European or darker-skinned, will produce efficient work, and what are the limits beyond which it is impractical to attempt work. Psychosomatic problems, which can be as difficult to cure as any purely physical disease, are of growing importance with greater rapidity of travel, which results in a lessened possibility for acclimatization en route, and with ever-increasing numbers of short-term travellers. As more people from temperate climates move into the tropics, whether for long or short periods of time, information on acclimatization becomes increasingly significant. Such information is pertinent also to a study of hill-stations because the temperature changes with altitude and hill-stations are used to alleviate health problems caused by heat.

Tropical fatigue may be associated with factors only indirectly related to climate. There is a tendency in the tropics towards malnutrition. With the presence of leached soils because of heavy downpours, and the absence of killing frosts, an abundance of bacteria is combined with a lack of minerals and vitamins in the soil and in the crops grown on the soil. Most contemporary Europeans in the tropics feel the need for regular consumption of vitamin pills.

The monotony of the climate, the wide spread of endemic diseases, malnutrition, the abundance of parasites, and the corresponding difficulty of maintaining healthy sanitation, lead easily to a tendency towards lethargy. The battle often seems to be a losing one. The British in India perceived the hill-station as a partial answer to these problems. However, a change of altitude in itself also requires physiological adaptation, which if not forthcoming can result in disease and even death from cardiac problems. These factors will each be briefly considered.

Effects of High Temperatures and Humidity

When a person used to living in cool climates visits the tropics, or when unexpected heat waves hit the normally cooler temperate latitudes, the human body may not be able to adjust sufficiently. Basal metabolism decreases by 5 to 10 per cent, body temperatures increase slightly, blood pressure lowers, blood volume may be increased by dilution in response to the needs of the skin, and the pulse is accelerated. These physiological variations are usually short-lived as acclimatization is normally fairly rapid. Between the second and the tenth day after arrival sweating usually becomes more profuse, and the tachycardia, elevation of body temperatures, and malaise, are expected to disappear. However, the higher the atmospheric temperatures, the greater the humidity, and the more motionless the air, the more difficult is the task of body heat regulation. Damp heat predisposes to heat-stroke or to heat-exhaustion, dry heat to dehydration and muscular cramps.[1] Crowding, exposure to sun, unsuitable clothing, and unusual physical exercise leading to muscular fatigue create conditions which enhance the likelihood of contracting a heat disease.

Heat-stroke, Sun-stroke, and Heat-exhaustion

Heat-stroke is a fever of short duration in which the patient's temperature rises to 107°F. or even 110°F. and over. If effectively treated within about an hour after the onset, the patient may recover. Death ensues if the condition persists as long as three hours.[2]

Though the geographical distribution of the malady includes a large part of the globe, the principal seats of it are, for obvious reasons, in the tropics. In 1886 Hirsch, summarizing findings from the medical reports on tropical heat-stroke of his day, was able to claim: "*Among these [the tropics] the countries of Eastern Asia, India, more particularly, hold the first place in respect to the number of cases.*"[3]

Heat-stroke is caused by a considerable failure of the body's heat-controlling mechanism. When a person is exposed to high temperatures there is a decrease in his ability to lower his metabolic rate and thereby diminish his heat production. Instead he increases his heat loss chiefly by evaporation from the skin. Any condition which reduces such evaporation makes heat regulation difficult. Thus poor ventilation of Indian army barracks during the hot night as well as marching in close formation in British Army uniforms in the hot sun by day, helped to cause heat-stroke. Sun-stroke differs from heat-stroke merely in the source of increase of body heat, not in the type or pathogenesis of the disease. Heat-exhaustion can be described by the layman as a less severe form of heat-stroke. The heat-regulating center is not yet knocked out of action, and the temperature usually remains in the low 100's F. or may even be normal. The patient is often unable to sweat. Heat-exhaustion has a lower incidence of fatality, but is often accompanied by severe heat-cramps.[4]

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[1] Dubois and Berghe, op. cit., pp. 9-10.

[2] Rogers, Happy Toil, p. 128.

[3] Hirsch, op. cit., III, 629.

[4] Dubois and Berghe, op. cit., pp. 16-18.

None of these diseases is found in the hill-stations where the air temperatures remain low even with clear skies and hot sunshine.

Tropical Fatigue

Tropical fatigue is a term coined by Macpherson in 1949.[1] The condition had previously had many names. Ellis preferred the expression hot-climate fatigue to avoid involvement with a definition of "tropical." Castellani had earlier invented the term Cacophoria Tropicalis and described it:

> One feels constantly tired and below par, everything is an effort. This feeling which is particularly marked in the morning may last for several hours or even the whole day . . . The principal symptom is fatigue, lassitude and lack of the sense of complete health or well-being.[2]

Before this it had been classified together with other psychoneuroses as tropical neurasthenia and described by Cathew as:

> A large number of minor psychic disturbances characterized by mental irritability, inability to work at full pressure and a mild depression which, of themselves, do not qualify such disturbances to be called typical psychoneuroses; but indicate, rather, a neurasthenic condition which is but a preliminary stage of the more advanced condition of nervous breakdown.[3]

In 1960 Macpherson summarized: "Tropical fatigue could be explained in terms of prolonged exposure without relief to a low level of heat stress."[4]

As already noted in earlier sections of this chapter, speculations on the fitness of Europeans in the tropics have probably been proposed since European man was aware of the existence of lands with climates different from his own. Factual knowledge concerning his physical fitness is of a more recent date and has been built up slowly through the centuries. Practical experiments obviously took place during the Age of Discovery and Europeans have attempted to live in the tropics since the era of colonization. Many have been the arguments based on limited knowledge, as to whether or not white man can live in the tropics on a permanent basis, as easily as his darker brother. After a study of the European colonization of Queensland, the Breinl Report claimed:

> Anybody who has followed the development of tropical medicine . . . must have realized that the question of populating a tropical country with the white race has

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[1] P. F. Ellis, "Hot Climate Fatigue in the Royal Navy: A Review of Lay Opinion," The Lancet, CCLXIII, No. 6733, Part 2 (July-December 1952), 529.

[2] Castellani, op. cit., p. 93.

[3] M. Carthew, "The *Aetiology and Prophylaxis of Mental Irritability in Europeans in* the Tropics," Journal of Tropical Medicine and Hygiene, XXX (1927), 113.

[4] R. K. Macpherson, "Physiological Responses to Hot Environments," Medical Research Council Special Report Series, No. 298 (London: H.M.S.O., 1960), p. 205.

> entered a new era. It is said to depend on sanitation alone. Free the tropics from disease, and the white race will thrive there just as well, if not better than in a temperate climate.[1]

Cilento showed that this report was not widely accepted. Between 1934 and 1939, Grenfell Price reviewed the history of all white settlements in the tropics and commented on the pertinent literature, concluding that opinions were still contradictory.[2] Others have continued the debate, which is still unresolved.

In the mid-century decades experiments were made with animals, especially mice and rabbits, to discover what actually were the differences in performance levels under exposure to different temperature and humidity conditions. Mills in 1942 showed that mice reared in a warm moist atmosphere had slower maturity rates and slower old-age developments, but they were far less resistant to disease, and often showed signs of what has since been called tropical fatigue.[3]

Since World War II, considerable studies have been made by doctors of the British Admiralty on human endurance in the damp heat. Concern had been expressed by the Board of Admiralty regarding the thermal conditions to which men were exposed during the war when serving on His Majesty's ships in tropical waters. As a consequence, a Climatic Efficiency Subcommittee was set up by the Royal Navy in 1944. Working in conjunction with the experimental center in the London Hospital for Nervous Disorders, a Tropical Research Unit was established in Singapore in 1948 to measure human endurance in the heat. Climograms were produced to show the critical limits of temperature and humidity at which human efficiency declines according to the type of work being produced.[4] The tests had limitations, however, in that they were all on a short-term basis, whereas tropical fatigue is more often associated with sustained effort.[5] Analyses were therefore made in the 1950s, largely through questionnaire procedures, among British naval personnel on the matter of tropical fatigue. In the present decade this type of work has been continued on a larger scale by German doctors.[1]

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[1] R. Cilento and C. Lack, Triumph in the Tropics (Brisbane: Smith & Paterson Pty., Ltd., 1959), p. 435.

[2] A. Grenfell Price, "White Settlement in Saba Island, Dutch West Indies," Geographical Review, XXIV (1934), 42-60; idem, "White Settlement in the Panama Canal Zone," Geographical Review, XXV (1935), 1-11; and idem, White Settlers in the Tropics, Special Publication, No. 23 (American Geographical Society, 1939).

[3] C. A. Mills, Climate Makes the Man (New York: Harper Bros., 1942), pp. 46-59.

[4] N. H. Mackworth, "Researches on the Measure of Human Performance," British Medical Research Council Special Report, No. 268 (London: H.M.S.O., 1950), pp. 119-40. See also the Special Report No. 298 by R. K. Macpherson in 1960 which includes a comprehensive bibliography of human endurance and thermal comfort tests.

[5] See criticisms by Douglas H. K. Lee, Climate and Economic Development in the Tropics (New York: Harper Bros., Council on Foreign Relations, 1957).

In these researches it becomes clear that tropical fatigue is closely related to mental and emotional as well as to purely physical aspects of health, and once again the age-old question of the influence of climate on tropical fatigue is resurrected. Ellis, using the premise that people generally tend to blame the hot weather for their complaints, but that when emotional breakdowns actually occur, psychiatrists tend to blame other circumstances such as family separation, inability to adjust to a strange culture, or over-indulgence in alcohol, decided to investigate, not sick people, but healthy sailors working in or near Singapore with a minimum period of eighteen months service. The symptoms they described can be formulated into a definition for tropical fatigue. In order of the highest average percentage of complaints these included: 1) lethargy, 2) reduced concentration, 3) lowered sense of responsibility, 4) personality changes of increased irritability and anxiety, 5) retardation with lessened capacity for work, and 6) memory defects.[2]

The Germans seemed particularly concerned with the establishment of a reliable health service program for people planning to live in the tropics. Boroffka and Röllinghoff were especially interested in the psychological aspect of tropical fatigue and they made suggestions for the type of psychological tests to be included in medical examinations. In this they put into practice Carthew's suggestion of 1927, when after classifying tropical travellers into three categories, adventurers, missionaries, and beachcombers, he showed why the first group are the most likely to suffer from tropical fatigue.[3]

Though Carthew felt the missionary group had far fewer neurotic problems than the others, Lennox, studying the years of service and turnover of 75,000 American missionaries, discovered that functional nervous disorders were three times as great among the missionary group than among those who had stayed at home.[4] The question of the extent to which climate is the chief influencing factor of tropical fatigue, however, is still unresolved. Castellani claimed: "The condition is probably of endocrine origin, the climate no doubt having a much greater influence on the endocrine glands than is generally supposed."[1] It is universally agreed that the condition terminates upon return home, but it is not agreed if the reason for this is climatic or cultural. Castellani had concluded: "The best treatment is, of course, a trip to Europe, but this being seldom possible, frequent changes to some hill-station are to be recommended." Röllinghoff, on the other hand, concluded:

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[1] See for example: A. Boroffka, "Vorbeugung seelischer Erkrangkungen bei Europäern in den Tropen," Medizinische Klinik, LXIII, No. 25 (June, 1968), 993-95; H. J. Diesfeld, "Zur Beurteilung der Tropentauglichkeit," Medizinische Klinik, LX, No. 53 (December, 1965), 2136-39; idem, "Höhenlage und Tropentauglichkeit," Medizinische Klinik, LXIII, No. 25 (June, 1968), 1004-9; W. Höfler, "Anpassung im Tropenklima--Klimakammer--Feldversuche Erfahrung," Medizinische Klinik, LXIII, No. 25 (June, 1968), 995-1001; W. Mohr, "Beobachten bei Rückkehrern aus tropischen Ländern," Medizinische Klinik, No. 25 (June, 1968), 981-85; W. Röllinghoff, "Psychische Probleme der sogennanten Tropentauglichkeit," Medizinische Klinik, LXIII, No. 25 (June, 1968), 986-90.

[2] Ellis, op. cit., pp. 527-29.

[3] Carthew, op. cit., pp. 115-16.

[4] W. G. Lennox, The Health and Turnover of Missionaries (New York: Methodist Book Concern, 1933), pp. 160-61 and 185.

> The climate of Uganda offers no special physical or psychological problems for European workers. However, a syndrome expressing tropical fatigue was definitely observable among Europeans living in Uganda. Its causes lie more in psycho-social human relationship tensions and cultural differences than in tropical [i.e. climatic] conditions.[2]

As Kampala, where his investigations were made, is at a lower hill-station elevation at 3,873 feet, and its highest mean monthly temperature is 72°F., this conclusion confirms the non-climatic aspects of tropical fatigue and suggests that change in social activity as much as the change of climate makes going to the hills beneficial to people suffering from tropical fatigue.

Effects of Altitude

Altitude has three effects: lower temperatures, less oxygen, and increased ultraviolet radiation. The lower temperatures are, of course the prime attraction of the hill-stations of India and a most welcome relief from the heat of the plains but individuals need to pay some attention to the special problems of less air and brighter sun.

Repeated measurements of air temperature have shown that the normal lapse rate is 3 1/2°F. per 1,000 feet of altitude. This, however, implies still air conditions, a state rarely obtainable in tropical lands as the hot air from the plains rises up the mountain slopes during the day, cooling at a dry adiabatic rate of 5 1/2°F. per 1,000 feet of vertical rise, or 3°F. per 1,000 feet once condensation has set in.

Together with a temperature drop which gives the hill-station its greatest attraction, come also decreasing atmospheric pressure and oxygen content. For every 900 feet of increased elevation the barometric pressure drops 1/30 of its value. At 17,500 feet a barometer reads about 500 millibars, which is about half the normal sea-level amount.[3] Already at 6,000 feet, arterial oxygen drops from 95 to 88-90 per cent. Thus there must be a corresponding increase in frequency and depth of breathing at this altitude compared to sea-level, a factor far more important to physical well-being than pressure changes. An ascent from sea-level to 10,000 feet often produces mountain sickness, which is characterized by lassitude, headache, nosebleed, and nausea. None of the Indian hill-stations[1] are this high, but even between 6-7,500 feet, the elevation of many of the popular stations, physical exertion is always accompanied by shortness of breath.

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[1] Castellani, op. cit., p. 93.

[2] Röllinghoff, op. cit., p. 987.

[3] Arthur N. Strahler, Introduction to Physical Geography (New York: John Wiley & Sons, Inc., 1966), pp. 76, 82, and 160.

In normally healthy people the body is able to make the necessary adjustments without difficulty. However, thyroid activity is sometimes lowered and there is also a change in cardiogram rates, especially at night, until the period of acclimatization is over. In his Addis Ababa (at 8,038 feet above sea level) studies, Diesfeld discovered that many people suffered from insomnia at first, with emotional unrest or nightmares. Older people found the adjustment more difficult.[2] Thus those with heart, thyroid, or nervous ailments, may require special medical care at hill-stations, or perhaps should remain at lower altitudes.

Although sun-stroke is not a hill-station disease, because of the cool and often clear atmospheric conditions, the lessened filtering effect of the thinner atmosphere on ultra-violet radiation, together with an overhead sun during the spring and early summer months of the year when visitors first arrive from the hot plains, it is extremely easy to become sunburned. Experienced people are usually cautious with regard to over-exposure, but inexperienced ones suffer until the effects of the sunburn have worn off. Sunburn is not, however, a serious problem.

Diesfeld's conclusions in 1968 reiterated what the British claimed over a century earlier, that high altitude hill-resorts are excellent places of recuperation for normal people. Tilt had claimed in 1875:

> All medical authorities agree that hill stations in India only serve the purpose of Brighton or Scarborough in England, that during the hot season they are admirably calculated to improve the health of those who are only debilitated by the heat; but that they are of no use to those who have structural diseases of any internal organ.[3]

Significance of the Hill-Station

Thus the question of whether the hill-station actually was a climatic necessity for the physical health of the British in the tropics and not merely a perceived necessity, is by no means simply answered. Certainly the prevalence of tropical diseases at the higher hill-station levels is considerably less than that on the plains. One could thus argue that the British in the colonial era had spent their money, time, and energies wisely when they established hill-stations. However, this was not equally true for all diseases. As noted, some heart, lung, and nervous ailments worsened at high altitudes. Nor was it true of the low-lying hill-stations which, below approximately 5,000 feet were by no means free from malaria and dysentery, two of the chief disease scourges. Yet, when the original higher stations became crowded, or where there were no available high-elevation situations, land was sought at lower altitudes for the erection of hill-stations and these centers were presumably also considered necessary by their users. One must conclude therefore, that in many instances the psychological value of the hill-station was of considerable importance.

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[1] Badrinath and Kedernath near Mussoorie (see Fig. 25) are single-purpose hill resorts rather than true hill-stations.

[2] Diesfeld, op. cit., p. 1007.

[3] Tilt, op. cit., p. 17.

(The British, as those in control of and responsible for the organization of Indian territories and communities, required periodic release from the inevitably resultant strains and tensions. Even slightly cooler temperatures would have helped them to feel more comfortable and at ease, especially if they were cognizant of the prevailing deterministic attitudes towards white man in the tropics, which as well-educated members of their communities they probably were. As they worked in conditions where the maintenance of high standards of hygiene and sanitation was extremely difficult to maintain, many of them doubtless were physically debilitated when they went to the hills for the summer months. Because their personal habits of dress, food, and housing were generally not adapted to living in hot temperatures, the cooler conditions in the hill-stations no doubt did accelerate their recuperation. But probably of greater significance yet was the psychological effect of going to the hills. Not only was the relaxation with change of scenery a tonic in itself, but the hill-station represented a British enclave of sophisticated urban activity where the British could live for some months in the company of other Europeans of similar background and pursue the type of cultural activities which had belonged to their homeland, whether this pertained to sports such as tennis, hunting, and golf; to musical and dramatic entertainments; or to the social activities found in the European towns of their day.)

The highly educated and wealthy Indian of today appears to be in many ways surrounded by a similar psychological milieu, especially through the present process of modernization. He not only is responsible for the government of his country with its complex internal and external relationships, but also he is working under an accelerated program of education, urbanization, and industrialization. He does not need the type of foreign cultural exclave, which was so important to the British, but he does require a vacation in different surroundings, and, perhaps, the social prestige of the hill-station. (The hill-resort can give him the quickest change of weather conditions for the shortest journey, and as it changes its functions to suit his, rather than previous European, needs, it is becoming an extremely popular Indian holiday center. One may, indeed, suggest that despite vast differences in culture between British and Indians, so marked is the cultural impact on Indians of this portion of the British heritage, that the hill-station may come to be perceived as a necessity by a group of Indians, as it was by the British in the past. However, while almost all the Europeans in India felt the hill-station to be a necessity, a similar perception among Indians will, in all probability, be limited to comparatively small elite and middle-class groups.)

CHAPTER III

THE LOCATION AND DISTRIBUTION OF HILL-STATIONS IN INDIA

What principles govern the distribution of hill-stations? How did their functions evolve over time? Where are hill-stations actually located? These are questions that will be answered in this chapter.

Once the idea of the hill-station became accepted, they spread rapidly. Land for the purpose of establishing hill-stations was originally obtained in the Himalayas in 1816, and the first house was erected in 1819. Within another two years a hill-station had already been founded in the Nilgiris in South India, 1,500 miles away. One can trace similar historical trends in several regions of India. After brief discussions of locational factors and principles governing hill-station distribution, the changing functions of the hill-station, and types of hill-stations, this chapter is devoted to a detailed discussion of the rise and distribution of hill-stations region by region in the Himalayas and Peninsular India, and closes with a note on the changing role of modern Indian hill-stations.

Locational Factors and Principles Governing Hill-Station Distribution

After official sanction was given for the use of hill-stations as recreational centers, a great demand for them arose throughout British India. It is therefore pertinent to suggest possible locational factors and distribution principles, and to evaluate their significance.

It would appear that at least ten factors have helped determine the distribution of hill-stations.

(1) Altitude. There are both upper and lower restrictions between which lie the optimal conditions for human adaptation, convalescence, and general well-being. Hill-stations were preferably located high enough to be considerably cooler than the plains below and thus cool enough to be above the upper limit of such tropical diseases as malaria, ancylostomiasis, and cholera (about 6,000 feet in India) and yet not so high as to cause serious physiological effects as mountain sickness, or disturbing cardiac and thyroid reactions (which occur with increasing frequency above about 7,500 feet).

(2) Micro-Climates. Different micro-climates, all of which make a location less or more

desirable, depend primarily on conditions of exposure to weather elements. Factors of exposure to, or shelter from, prolonged sunshine, rain or prevalent winds, often determined the actual hill-station site within a range of possible locations. The choice was a complex one, however. At higher altitudes exposure to sunshine but shelter from wind and rain were the desired factors, as exemplified, for example, in the location of Ootacamund in the lee of Dodabetta Peak. At lower altitudes, on the other hand, exposure to wind and even rain was desirable as seen in the location of Parasnath Hill above the Hazaribagh Plateau of the Northeast Deccan, and at Courtallam in the Tenkasi Gap of the Western Ghats.

(3) Terrain. Differences in soils, slopes, type of bedrock, and landforms frequently led to problems of erosion or landslides, undesirable factors of hill-station location. Choice of hill-station site was inevitably influenced by the more obvious aspects of terrain, so that Kodaikanal, for instance, was located in a high basin rather than on a neighboring ridge. However, many of the erosional problems did not become apparent until after the vegetation cover had been removed, so that many of the Himalayan stations continue to suffer frequent damage from landslides.

(4) Scenic Beauty. As the British endeavored to escape the heat of the dusty Indian plains in May, one of the important factors which affected their choice of hill-station location was the question of scenic beauty, particularly the presence of green grass and woodlands, which reminded them of home. All the early high-altitude hill-stations of the Himalayas were located within easy reach of spectacular views of the snow-peaked mountains, while those of the south were on rolling grassy downs.

(5) Accessibility. One of the more important factors to be considered was accessibility. A nearby station which could be reached quickly might well be more desirable than one with greater attractions but very difficult to get to. Hill-stations were generally distributed only in those sections of the mountains which were comparatively easily accessible from the plains. The concept of accessibility included not only physical accessibility based on distance and availability of transportation, but also social factors such as political access, or control. Thus hill-stations, even in perfect physical locations, generally did not develop in the native states of India not under direct British control.

Most of these factors--altitude, micro-climates, terrain, scenic beauty, accessibility--were basically concerned with physical conditions. Social and political conditions were equally relevant.

(6) Elements of Chance. The personal interests of the founders was often the decisive element in hill-station location, as a hunter chose a different site for his camp than a fisherman attracted to a lake, or a mountaineer desiring a glacier within easy reach. Territory for hill-stations was rarely systematically or officially surveyed. Rather, permanent settlements usually grew from original camp sites. Thus, such elements of chance played a perhaps unexpectedly important role in hill-station location.

(7) Political Constraints. The British originally set up coastal trading stations and in the early years did not own much high land. For most hill-station sites, therefore, they needed to acquire territory from neighboring native princes. They were not always able to obtain choice sites for hill-stations. Darjeeling, for example, was built on land once owned by the Raja of Sikkim. Though in an extremely favorable position with regard to altitude and scenic beauty, there were few locational alternatives on the allotted territory, and this hill-station was one of the earliest to become over-crowded.

(8) Strategic Importance. However inaccessible they might be from the British point of view, military cantonments at times had to be established close to hostile hill-tribes whom it was felt must be controlled. Hence the location of stations such as Chakrata, situated on a mountain road between Mussoorie and Simla. Another form of strategy was to build army training stations several miles from distracting recreational centers, as seen in many of the single-purpose cantonments, for example, Landour, Bakloh, and Ranikhet in the Himalayas, or Wellington in the South.

(9) Plural Societies. To some extent the question of plural societies also entered the decision of hill-station distribution. One would hardly expect the British governor and army commanders to spend their vacation at an inferior site while the Eurasian students at a mission school occupied an ideal one nearby. Though societal arrangements were often fitted into the internal organization of a single hill-station, as for example, at Simla, they sometimes, like cantonments, caused the establishment of neighboring hill-stations, as seen at Dharmasala and other satellite hill-stations.

(10) Reputation. Previous occupance of the district, disease, and other factors which may have created a reputation for a certain locality might have been extremely important factors in the ultimate acceptance or rejection of a particular site as hill-station location had Indians been responsible for their distribution. However, the British superimposed the hill-station idea on the Indian landscape with little recognition of Indian prejudices or knowledge of local history, so that factors of reputation apparently played only a minor role.

In the course of this part of the study the relative importance of these locational factors and principles are noted with regard to various aspects of hill-station location and distribution.

Changing Functions of the Hill-Station

The British hill-station in India was originally a high-altitude health sanatorium for soldiers and civil servants of the East India Company. It very quickly developed into summer headquarters and a recreational center in cool altitudes, the purpose of which was to prevent ill health rather than to cure sickness. Soon the Company sent its entire government into the hills for the duration of the hot season and with such official sanction the hill-station became a summer recreational center for all Europeans in India. Though early in its history it often included a permanent nucleus, such as a hospital or army cantonment, and later it frequently became a center for European schools, hill plantations, and sometimes local industry, it remained essentially a seasonal settlement. However, it was usually multi-functional, and different types of hill-stations were set up according to which functions predominated. Though most hill-stations were started through the private initiative of Company officers, some were chosen as the official summer seat of branches of the government, while others were not.

Types of Hill-Stations

It is possible in its early years to classify three distinct types of hill-stations: (1) official multi-functional hill-stations which were primarily seasonal recreational centers, but which also contained permanent barracks, a hospital, school, and agricultural estates, and which were the seat of government and perhaps military summer headquarters; (2) private multi-functional hill-stations which were not official summer headquarters, though in other respects they were like the first category; and (3) single-purpose hill-stations. These were primarily cantonments whose main locational factors were strategic. These early hill-stations were usually established in previously undeveloped land.

Many later hill-stations and even some of the earlier strategically oriented cantonments made use of older Indian cities, and thus included previous Indian urban functions together with hill-station functions. Such stations, or those where a British Resident was merely given hill-station privileges in Indian territory so that again the hill-station functions were not the predominant occupations, may be classified as (4) minor hill-stations. Also in later years when the demand for hill-stations exceeded the amount of land available in more desirable locations, a further category came into being: (5) the satellite hill-stations, which grew around the earlier centers as these became overcrowded and were unable to expand. They took over some of the functions of the original centers but never became official headquarters. Frequently they were in inferior locations.

Already before Independence a process of Indianization had become evident at hill-stations and eventually a new set of functions became part of the Indian hill-station system, creating three new types: (6) the multi-functional tourist hill-station, (7) the single-purpose tourist hill-resort, and (8) the modern Indian hill-station, which will be discussed later in this chapter.

Types of hill-stations are discussed in a general way in the following account of hill-station distribution. Each individual hill-station has been classified according to type and its type recorded in Figure 25.

Hill-Stations of the Himalayas

What types of hill-stations were originally established in the Himalayas? What factors influenced their location? What changes of function took place during the years to cause the establishment of different types of hill-stations?

Three factors seemed to be of prime importance with regard to the location of the first official multi-functional British hill-stations created in India: political considerations, height above sea level, and chance factors related to the personal interests of the founders.

The first hill-station in India was established at Simla (7,200 feet) on land which was retained by the British at the Nepalese Peace Treaty in 1816 as compensation for the cost of restoring law and order to the mountain frontiers. These Gurkha wars had lasted for two years and during this time the recuperative effects had been observed on the health of the Company's officers taking part in military excursions in the hills and in the maintenance of army barracks at high altitudes. At the end of the war the Nepalese ceded the districts of Garhwal and Kumaon to the British,[1] and in this territory three major multi-functional hill-stations, Simla, Mussoorie, and Naini Tal, as well as several other types of hill-stations, were established (Fig. 25). Thus political as well as physical factors were of prime importance with regard to the location of the early stations.

Simla's first house was a thatched cottage built in 1819 by a Lieutenant Ross on a site he discovered on a hunting trip. Three years later his successor erected the first permanent house. By 1826 many officers had followed this example and the settlement acquired the name Simla. Chance factors, therefore, also played a role in hill-station location.

Lord Amherst, Governor General of the East India Company, spent the summer of 1827 at Simla, even though he was in good health, and he thereby encouraged the hill-station to emerge as a recreation center for the prevention of ill-health rather than its cure. By 1838 Simla was recognized as the summer seat of the government and the hot-season military headquarters.[2] Going to the hills for an annual vacation became the routine of most Europeans employed in India and a lively social program was established by the holiday-makers, which in some cases was detrimental to its original function as a sanatorium. Sandwith, in 1907, wrote of Simla, the first official multi-functional British hill-station in India: "For cases requiring rest it cannot be recommended, as the round of official business and gaiety is incessant."[3]

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[1] R. C. Majundar, H. C. Raychandhuri, and Kalikindar Datta, An Advanced History of India (London: Macmillan & Co., 1967), p. 716.

[2] Imperial Gazetteer of India, XXII (Oxford: Clarendon Press, 1908), 282-83.

[3] Sandwith, op. cit., p. 363.

Though accessibility became an important later factor in hill-station distribution, in the early years sheer determination to make the hill-station accessible was more important. The organization involved both in its establishment and also in participation of its seasonal functions was considerable. When the hill-station became summer headquarters, British officers brought with them a large retinue of followers. These included lesser echelons of the Civil Service together with the necessary servants and traders to ensure the availability of equipment and food supplies so that work could proceed as usual. When army commanders transferred headquarters to the hills, the sepoys undergoing training obviously went up with them. A permanent staff to maintain property was required apart from a permanent hospital staff. An announcement published in 1857 gives a picture of the population movement to Simla during the summer months:

> Should the Governor-General and the Commander-in-Chief come up next season, it will consist of British subjects 200, natives 8, 000; and when the tributary chieftons and followers come in, it will be nearly 20, 000. Again in winter, when but few remain, it will probably not exceed, British subjects 20, natives 2, 000.[1]

During the hill-season, then, population multiplied tenfold.

Road-building up into the steep Himalayan ranges was no simple matter (see Fig. 15). The geology of the Outer Himalaya Range, on which many of the British hill-stations have been built, is extremely complex. The area has been subject to considerable tectonic movements and there is evidence of much folding and faulting. A complete spectrum of rocks can be found from Pre-Cambrian to recent, often thoroughly out of order, with older rocks overlying Tertiary deposits. At the hill-station level, hard beds of compact limestone alternate with strata of loose, soft slates. These are interspersed with veins of gneisses, mica and hornblende schists, and bands of quartzites. At the base softer sandstones, conglomerates, and clays are often found. Once the vegetational cover has been removed the area is easily eroded and upkeep of roads remains an expensive item on the budget. Many of the Himalayan hill-stations and their access roads have suffered severely from landslides, the result of erosion due to the impact of man in clearing the vegetational cover for settlements and routeways, to periodic cyclones with very heavy precipitation, and to earthquakes. Simla is reached by both road and mountain railways from Kalka. Nearly half the railway has a gradient of 1 in 33 and it has 103 tunnels along its sixty mile length.[2]

Nor were the climatic problems necessarily solved by the move to the hills. The hottest months in the Plain of Hindustan are May and June when the average monthly tem-

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[1] E. Thornton, A Gazetteer of the Territories under the Government of the East India Company and the Native States on the Continent of India (London: Allen & Co., 1857), p. 895.

[2] O. H. K Spate and A. T. A. Learmonth, India and Pakistan: A General and Regional Geography (3d ed.; London: Methuen & Co. Ltd., 1967), p. 218.

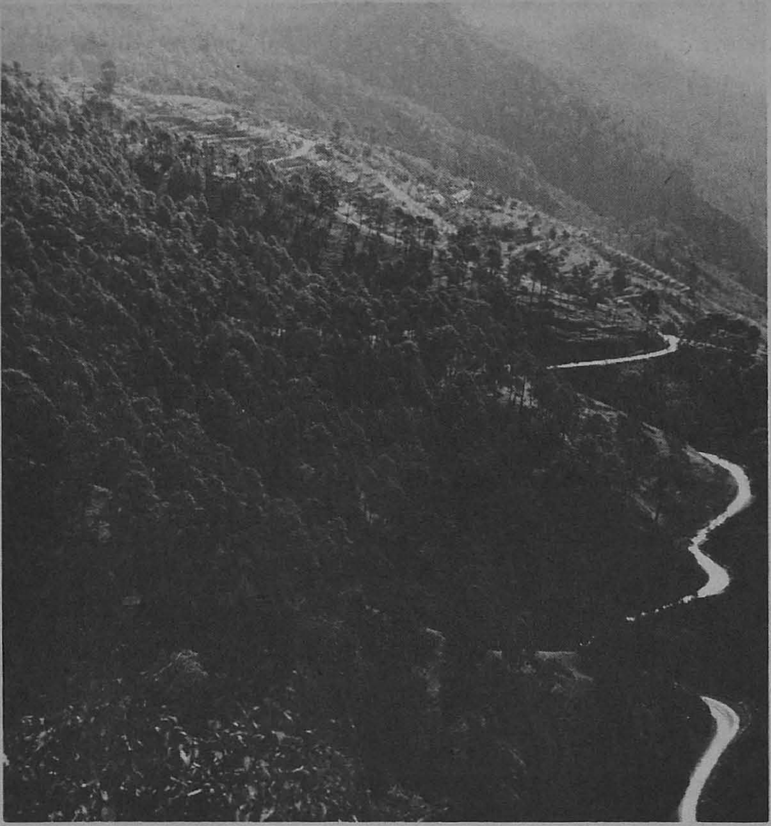

Fig. 15.--The road to Naini Tal. Roads to the hill-stations were difficult to construct and are expensive to keep up.

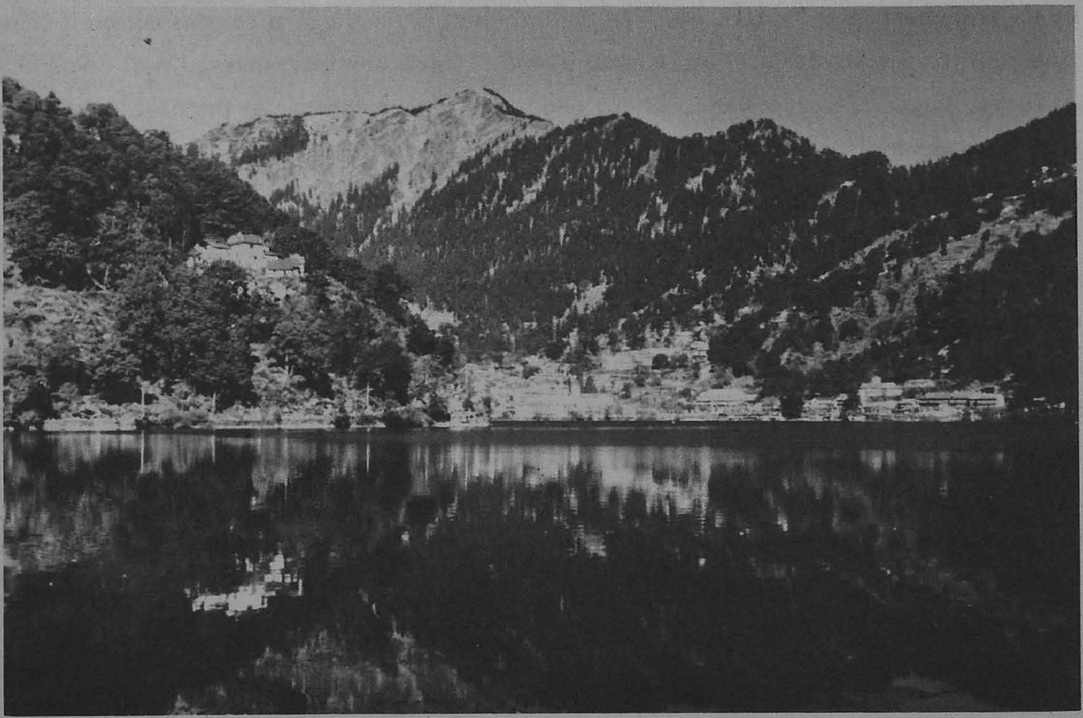

Fig. 16.--Naini Tal built at the head of a natural lake quickly became a popular hill-station.

perature figures remain over 90°F. In April and May the temperatures in Simla are cool, in the low 60°s, and the air is pleasant and dry with the mean relative humidity in the afternoons at 35 per cent. The hill-season extends into July and August, but by the end of June an abrupt and complete change of weather occurs in Simla. With the arrival of the monsoon the air becomes damp, and in July and August the rain pours down, giving a total of 35 inches precipitation during the two months. Clouds hang low on the front ranges of the Himalayas blocking out views of the distant snows. Simla is often enveloped in mist for days or even weeks at a time.[1]

Despite all problems the hill-station grew. A century later Simla's permanent population became what its earlier season population had been. Spate commented incisively:

> That a town should be here at all is surprizing; that it should have a population of over 18,000 (March 1941), mainly non-productive, is astonishing, a monument to the technical skill, and the social insensibility, of British rule. Every piece of metal had originally to come up the cart-road from Kalka; even today [still applicable in 1967] the internal transport services are mostly human, rickshawmen or porters bent double under tremendous packs. Until recently both the Indian and the Punjab Governments migrated annually to Simla, and until 1912 this involved, for the Central Government, the 1,115-mile journey from Calcutta.[2]

The other early hill-stations faced similar problems. Mussoorie (6,500 feet), created in 1826, was another center, established on land ceded by Nepal in 1816, which developed as a multi-functional official hill-station (see Fig. 17). A comment on the road by an official in 1828 describes it as "difficult and perilous in the extreme. It sometimes winds down the edge of rocks, sometimes zigzags up the face of the hill; plunges into dark depths of a ravine, or creeps over the summit of a native crag."[3] The first part of the road could be driven in a tonga. As late as 1907 the upper sections still required pony-back riding or a sedan chair for women and children who were carried up by coolies. All this was after a 36-hour rail trip from Calcutta. Nevertheless the center contained about a hundred residences by 1841 and by mid-century Mussoorie had made its reputation as a health resort. It was considered a specially healthy place for children, and by the turn of the twentieth century it had nine schools for boys and five for girls.[4]

To support the schools and permanent staff as well as hill-season vacationers, encouragement was given by the government for the creation of estates on the hillsides. Here in the cooler weather, temperate crops could be grown including potatoes, onions, and a variety of European-type vegetables and fruits. Rice, ginger, turmeric, and honey were also obtained from the hill estates and thus did not require transport up from the plains. The hill pastures gave good grazing so that milk and butter were locally available.

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[1] W. G. Kendrew, The Climates of the Continents (5th ed.; Oxford: Clarendon Press, 1961), pp. 190, 285, and 292.

[2] O. H. K. Spate, India and Pakistan: A General and Regional Geography (London: Methuen & Co. Ltd., 1954), p. 192.

[3] Thornton, op. cit., p. 652.

[4] Imperial Gazetteer of India, XVIII, 61.

By 1842 the Himalayan Club of Mussoorie had 155 members. Those who did not own residences could rent a suite at the club house. The club organized beer-brewing with local barley and hops imported from England, and the drink became so popular that a permanent brewery was established by the mid-nineteenth century. Wines were generally imported from Europe.[1]

In some places, as at Simla, the official multi-purpose hill-station became summer quarters for the army on the plains. In other instances cantonments were built as separate entities (single-purpose hill-stations) some distance away. A year after the creation of Mussoorie, a separate convalescent center for the reception of invalids from cantonments on the plains, was established at Landour, a few miles from Mussoorie. From the early years both centers grew steadily. By 1842 Landour had 42 private houses and a large hotel as well as five barracks for sick soldiers with an officer corps of eight permanently on duty. It was estimated that of the average 110 Europeans sent annually to these barracks, 100 returned to the plains cured.[2] The two centers, Mussoorie and Landour, have since expanded and merged to become indistinguishable to the casual observer.

Though included in the property which became British in 1816, the glen at the head of Naini Tal lake remained covered with dense forest prior to 1839, and the rest of the valley was resorted to only by herdsmen of the surrounding villages, who brought their cattle in during the hot season and later summer rains. The area had a notorious local reputation not only for wild animals, chief of which was the tiger, but also for demons, so that herdsmen never came alone, but previously arranged a specific arrival date. Together and armed they propitiated the local goddess and tried to protect their herds, but apparently the annual loss of cattle and men from wild animals was considerable. In 1841 the lake was "discovered" by a Calcutta government official and the following year a contractor was hired to construct 12 bungalows at the head of the lake. By 1864 Naini Tal (6,400 feet) had become the summer seat of the government for the North-Western Provinces and thus an official multi-purpose hill-station (see Fig. 16). Church, hospital, and club house were built as well as cantonment and convalescent depot for European soldiers and barracks for Gurkha sepoys some distance away.[3]

Soil and slope conditions were obviously not considered important locational factors in the early years as the governor's house narrowly escaped destruction by a serious landslide in 1880. After forty years of human settlement occupation, a visitor described the terrain and the landslide:

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[1] W. W. Hunter, The Indian Empire: Its Peoples, History and Products (3d ed.; London: Smith, Eder & Co., 1892), p. 719.

[2] Thornton, op. cit., p. 558.

[3] Imperial Gazetteer of India, X, 121.

> The state of the hill in dry weather is as a mass of the consistence of oatmeal which, when mixed with water, spreads out like porridge . . . After unusually heavy rains (in 1880) the whole hillside was one mass of semi-fluid matter and required very little to set it in motion . . . The motive power was a shock of earthquake--a very common occurrence in these hills. A large portion of the hill descended with enormous velocity and violence . . . The catastrophe was the work of a few seconds only . . . The dead and missing numbered 151.[1]

Despite frequent landslides the hill-station grew quickly. By the 1901 Census its population was counted as 7,609 and in the summer of that same year a hill-season count was recorded as 15,164.[2] Its situation by the lake makes it one of the most beautiful of the hill-stations.

Within the Kumaon territory was the old capital city, Almora, at 5,000 feet. Though this town had apparently shown signs of accelerating decay under Gurkha rule, it was revitalized as a British hill-station. The old fort became a cantonment, and the ancient Kumaon Rajas' palace a jail. European houses scattered over the hillsides among Brahmin houses, and the town regained its former importance as a distributing center for trade between the mountains and the plains. The basis for Almora's location was its strategic position. Otherwise it would no doubt have been rejected by the British because of its comparatively low altitude. Nevertheless, after it had become a minor hill-station, the British were made aware of the existence of other locational factors such as micro-climates. Of Almora Sandwith pointed out: "The circulation of the air is much freer than at Naini Tal and Bhim Tal, and the place is perhaps the healthiest of the Kumaon stations."[3]

With the reshuffling of land during and after the Nepalese Wars, a range of hill territory, somewhat south of Simla, was wrested from the Gurkhas in 1814 and transferred to Patiala State by the British the following year. Though Patiala was a native state, the British sent a representative there in the form of Political Agent. During the era of hill-station building, Chail, was created at an altitude of 7,400 feet in this mountain territory. It contained a summer palace for the maharaja and a house and offices as sanatorium for the Political Agent. In 1900 its population was only twenty, but its seasonal visitors numbered a thousand.[4] These included many Indians in good standing with the maharaja and thus demonstrates that the hill-station idea, though of foreign origin, was accepted by Indians at an early date.

Officials whose districts were not in the vicinity of the Kumaon Himalayas sought out nearer Himalayan territories which could be turned into hill-stations. One of the great needs was an area to serve the large British territory of Bengal with its headquarters in Calcutta. Again, in the first instance, political strategy was the prime locational factor for such a hill-station.

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[1] H. R. Nevill, Nainital: A Gazetteer, Being Vol. XXXIV of the District Gazetteers of the United Provinces of Agra and Oudh (Allahabad: Government Press, 1904), p. 312.

[2] Imperial Gazetteer of India, XVIII, 332.

[3] Sandwith, op. cit., p. 363.

[4] Imperial Gazetteer of India, X, 121.

British Sikkim, as the Darjeeling range became known, was acquired by the Company during the governorship of Lord Bentinck in 1836. Since the 1816 Treaty of Nepal, friendly relations had existed between the Raja of Sikkim and the East India Company. Fearing continued outbreaks of war between Bhutanese and Nepalis, the British had been anxious to establish a buffer state between the two. They thus rescued the deposed Sikkimese raja and restored him to his throne in Gangtock. With the rapid growth of hill-stations in the 1830s Bentinck approached the raja with a request for land. The raja's first offer was the Darjeeling range, but his price was unreasonable. Being reminded that Darjeeling had been returned to him without cost, he eventually gave it as an unconditional gift, for which, however, the British paid a handsome annual allowance until 1850, when a British biological expedition visiting Sikkim was attacked and its members put to death by the raja, thus ending the friendly relations.[1] The contract reads as follows:

> The Governor-General, having expressed his desire for the possession of the hill of Darjeeling on account of its cool climate, for the purpose of enabling the servants of his Government, suffering from the sickness, to avail themselves of its advantages, I the Sikkimputtee Rajah out of friendship for the said Governor-General, hereby present Darjeeling to the East India Company.[2]

Darjeeling (7,150 feet) was originally considered a sacred hill. Its highest peak contained a Tibetan Buddhist temple, and its name means Place of the Dorje, the mystic thunderbolt of Lamaism, said to be associated with a cave beneath the temple. When the British moved in the temple was replaced by a sanatorium and cantonment, and a new temple was built on lower slopes of the hillside. By 1857 the station became the official summer seat of the Bengal government (see Fig. 18).

Like most Himalayan areas, it is subject to frequent landslides. The damage caused by an earthquake starting landslips in 1897 was disastrous. At least three hundred people were killed by another landslide set in motion by a cyclone two years later.[3] Road upkeep is expensive. In 1876 records show a cost of Rs. 25-30 per mile per annum for the district generally, but Rs. 150 per mile per annum for the hill-station roads.[4] In 1872 a narrow-gauge cog railway was constructed to Darjeeling from Siliguri Junction on the

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[1] A Statistical Account of Bengal, Vol. X: Districts of Darjeeling and Jalpaiguri, and the State of Kuch Behar (London: Trübner & Co., 1876), pp. 88-89.

[2] A. V. A. Mercer and B. K. Mukherjee, A Short History of Darjeeling District and Its Hill Peoples (Kurseong: St. Alphonsus Press, 1962), p. 2.

[3] Imperial Gazetteer of India, XI, 179.

[4] Hunter, op. cit., p. 128.

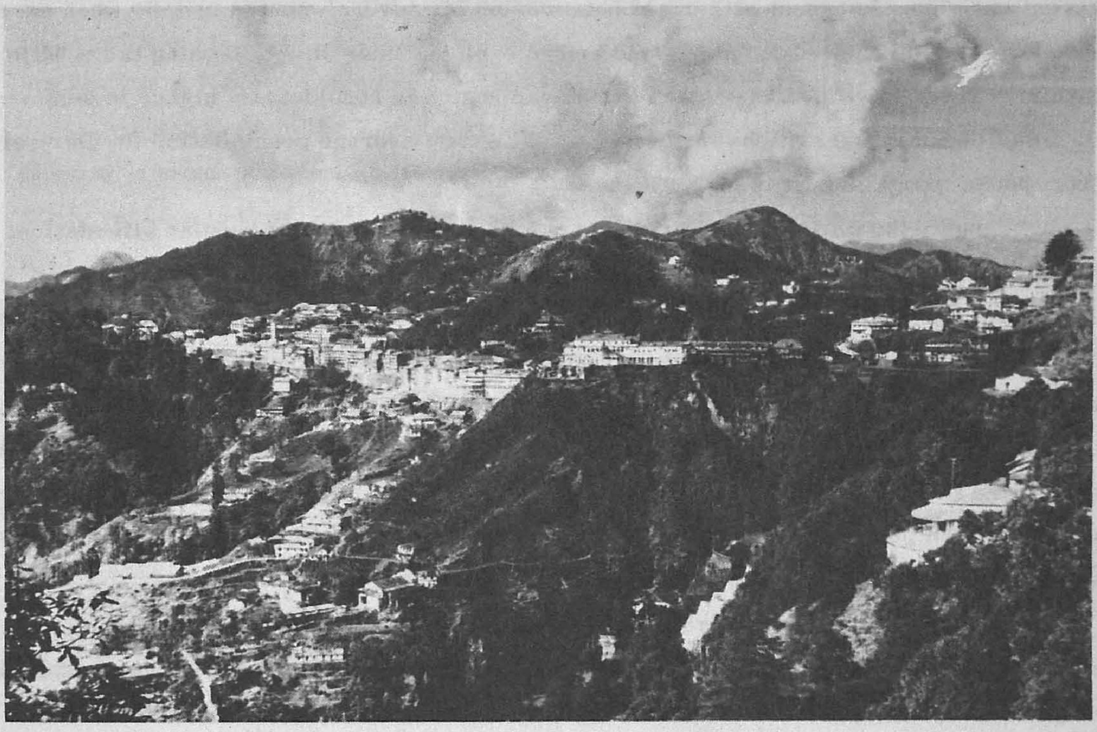

Fig. 17.--Crowded bazaar and spacious compounds at Mussoorie, 6,500 feet.

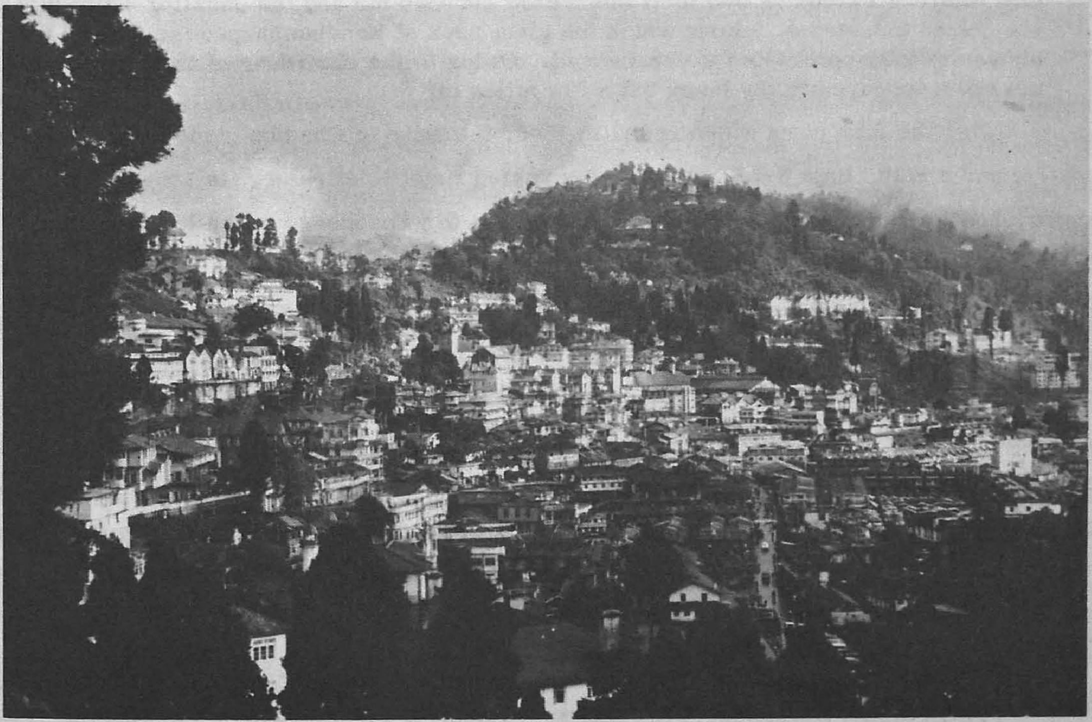

Fig. 18.--Darjeeling, 7,150 feet, was one of the first hill-stations to become overcrowded. There was little room for expansion and satellite hill-stations developed nearby.

plains. Both road and railway are frequently submerged in places by debris. The most recent landslides left them both out of commission for several months in 1968 when excessive floods also removed the high stone bridge over the Tista River, closing the road to Sikkim. The rainfall in this eastern Himalayan region is considerably higher in summer than that of Simla and stations further west. The total average precipitation for Darjeeling from June through August is eighty inches.

Despite the difficulties, Darjeeling quickly grew into a very popular hill-station. St. Paul's School for the sons of Europeans, which had been established in Calcutta in 1845, was removed to Darjeeling in 1864. Tea planters were encouraged to settle on the hills. Before the end of the nineteenth century all available building sites had been taken and built upon.[1] Before the creation of East Pakistan, Darjeeling was at a convenient rail distance of twenty hours from Calcutta (a journey now complicated by a tedious ferry-trip across the Ganga, though it is possible these days to fly to Bagdogra Airport near Siliguri), a factor which probably assured its popularity as a hill-station, despite the fact that Simla remained the station for the Central Government until 1912.

Darjeeling has an extremely beautiful location. Dr. Joseph Hooker, botanist and for many years Director of Kew Gardens, London, and a victim in 1850 Sikkim massacre, wrote his impressions of the station on his Himalayan tour in 1848:

> Early next morning I caught my first view, and I literally held my breath in awe and admiration. Six or seven successive ranges of forest-clad mountains as high as that whereon I stood (8,000 feet) intervened between me and the dazzling white pile of snow-clad mountains, among which the giant peak of Kanchenjunga rose 20,000 feet above the lofty point from which I gazed. Owing to the clearness of the atmosphere the snow appeared to my fancy but a few miles off.[2]

After the Sikh wars which ended in 1848, the state of Chamba came under British control and a Sikh, Raja Sri Singh, was designated its official ruler. In 1851 he was approached for land on which to build a sanatorium for Europeans in the Punjab, by the British government under the direction of Colonel Napier, who selected a site. Thus political ownership and altitude were again the guiding locational principles for a new hill-station. However, in the case of Dalhousie (6,680 feet), some effort was made to study the local terrain after the land was purchased in 1853 and the hill-station was officially planned, together with a series of cantonments.[3] Thus factors of slope, soils, and microclimates were to some extent considered in this instance. No systematic occupation, however, took place until 1860 when the area became part of Gurdaspur District of the Punjab and the road from the plains was widened. Accessibility thus also played an important early role. A permanent British cantonment was established in 1866 at Balun, two miles below Dalhousie, and a second at Bani Khat, still lower, where a detachment of British regiment was stationed during the hot season only. Gurkha barracks were also set up by the British at Bakloh, some fourteen miles southeast of Dalhousie.[1]

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[1] Imperial Gazetteer of India, XI, 180. [2] Thornton, op. cit., p. 248.

[3] Punjab States Gazetteer, Vol. XXIIA: Chamba State (Lahore: S. T. Weston, Compiled and published under the authority of the Punjab Government, 1910), p. 109.

Another site in the Punjab somewhat east of Dalhousie, had earlier, in 1849, been planned to accommodate a native regiment on waste land containing a dharmasala, or Hindu rest house for pilgrims. As well as army personnel, however, civil authorities went up to build themselves residences in these hills. By 1855, Dharmasala, as it became known, was a flourishing small hill-station with civic centers, a library, church, and public gardens, and it was formally recognized as the district headquarters.[2]

With the growing popularity of hill-stations in the mid-nineteenth century, those which lacked room for expansion, notably Simla and Darjeeling, became overcrowded. Satellite hill-stations were frequently started some distance away from the old centers. To some extent this had taken place quite early when cantonments were deliberately located as satellites a few miles off, as at Landour, Balun, Bani Khat, and Bakloh, rather than at the main centers of Mussoorie and Dalhousie. Elsewhere satellites were established as much as twenty or thirty years later when the original stations were becoming filled to capacity during the hill-seasons. For these satellite hill-stations different distributional factors came into effect. Height above sea level was no longer the prime consideration. All the early stations in the Himalayas lay between 6,000 and 7,500 feet in altitude and were thus often 20-30°F. cooler than the plains before the onset of the southwest monsoon, and more than that once the rains started. The satellites were usually at considerably lower altitudes and were often not totally new settlements. Factors of micro-climates, disease, local reputation, and previous occupance, became predominant.

There was frequently a tendency for the government elite to occupy the higher hill-stations, while poorer groups, often missionaries and Anglo-Indians, were satisfied to be at the lower levels. This, however, applied equally in the actual settlement pattern of the original high-altitude hill-stations. Spate's comments in this regard are explicit. His remarks refer to Simla:

> The clerks in some offices had to climb 800 feet in a quarter of a mile to reach their work; this in a climate with nearly 35 inches of rain in July and August together. Other services had a yet inferior situation: laundrymen had a pull of 1,000 feet from their dhobie-ghats to their customers. There can be few places in the world where the upper ten was so literally upper; the Viceroy and the Commander-in-Chief had naturally the best peaks. But all these inconveniences were subordinated to mean summer maximum temperatures of 67-82°F. compared with 110-120[°F.] in the plains below.[3]

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[1] Imperial Gazetteer of India, XI, 126.   [2] Ibid.

[3] Spate and Learmonth, op. cit., p. 218.

All five of the official multi-functional Himalayan hill-stations (i.e. Darjeeling, east of Nepal; Naini Tal, Mussoorie, Simla, and Dalhousie, respectively, westwards of Nepal), developed satellites. A small cantonment was built at Jelaphar, on a ridge overlooking Darjeeling, approximately five hundred feet above the level of the town, and a second at Ghoom, near the site of an ancient Tibetan Buddhist temple about nine miles down the ghat road. Over a thousand feet below Darjeeling at Lebong, another cantonment was established in 1896. Though the barracks were at first small, the government purchased the entire plateau spur to be able to accommodate a whole battalion. At a distance of only ten miles from Darjeeling as the crow files, but more than three times that by winding road, Kalimpong and Kurseong were developed into hill-stations to the east and south of Darjeeling respectively. Kalimpong, with an altitude of 3,933 feet, as compared to the 7,146 feet of Darjeeling, was an ancient trading site on the Tibetan mule-caravan route. Orphanages for destitute children of European descent were established there in 1900. In its early years it also had a private sanatorium where some of the patients stopped to acclimatize on their way to the higher altitude of Darjeeling.[1]

In addition to Almora, a further cantonment which housed British troops throughout the summer, was built fifty miles from Naini Tal at Ranikhet in 1869 (see Fig. 19), on land originally received from the 1816 treaty. Because of crowding at Simla it was at one time proposed to move the summer quarters of the Central Government from Simla to Ranikhet where there is more expansion room, but the suggestion was never accepted. Ranikhet is protected from the southwest monsoon by a high plateau which shields it from the heavier rainfall of many of the Himalayan hill-stations and it thus enjoys a more equable climate. At the same time the mean humidity is lower and there is less cloud cover. Its total rainfall, 49 inches, is just over half that of Naini Tal. Nearby Chaubattia was used as a sanatorium for British troops, but had no accommodation for civilians. Fifty miles north of Naini Tal, Kausani became a small hill-station. Though a satellite, its elevation is 7,000 feet and thus slightly higher, not lower, than Naini Tal. It lies at the foot of the Pindari Glacier from where the governor's house has a spectacular view of the entire Nanda Devi mountain range (see Fig. 20). It has remained small because of its considerable distance from the plains. A small sanatorium was also built at Bhim Tal which, though lower, only 5,000 feet, was discovered to be malaria-free and considered very healthy even if not as bracing as Naini Tal.[2]

In the Mussoorie area both the military cantonments at Dehra Dun and Lansdowne have been classified in the literature as hill-stations. Lansdowne, 5,825 feet in altitude,

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[1] The appropriate Imperial Gazetteers of India and other district gazetteers give information on these and the following smaller centers.

[2] Sandwith, op. cit., p. 363.

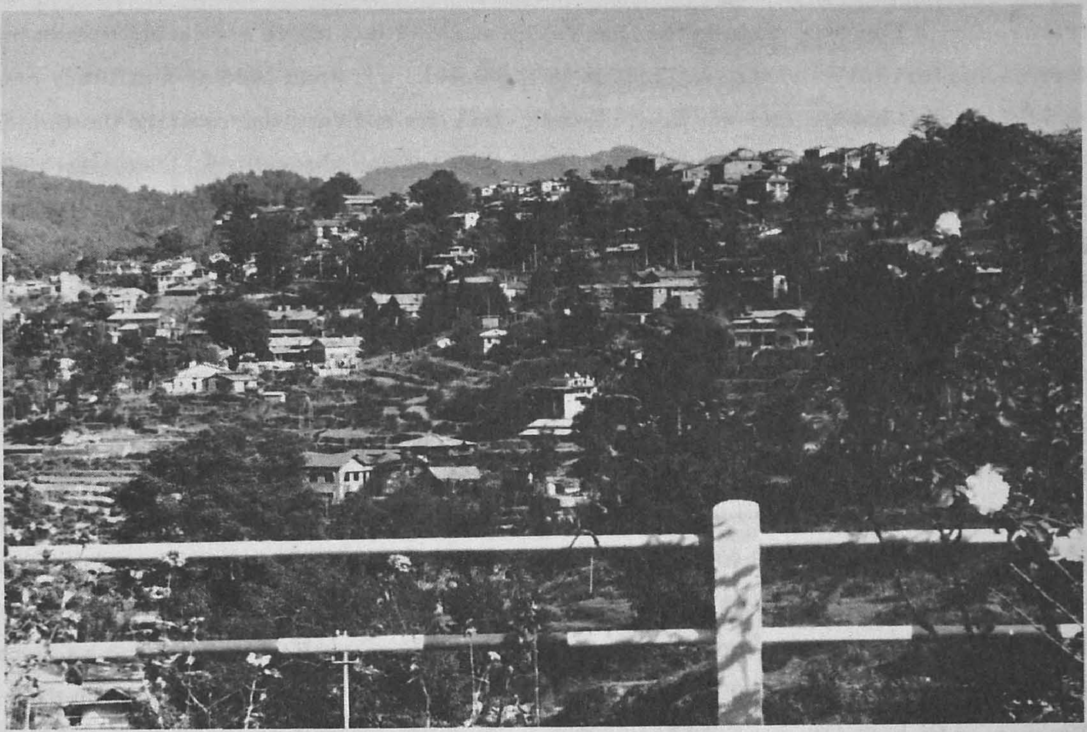

Fig. 19.--Ranikhet, 6,000 feet, had more room for expansion than many of the earlier hill-stations. Lack of accessibility prevented it from becoming the Company summer headquarters.

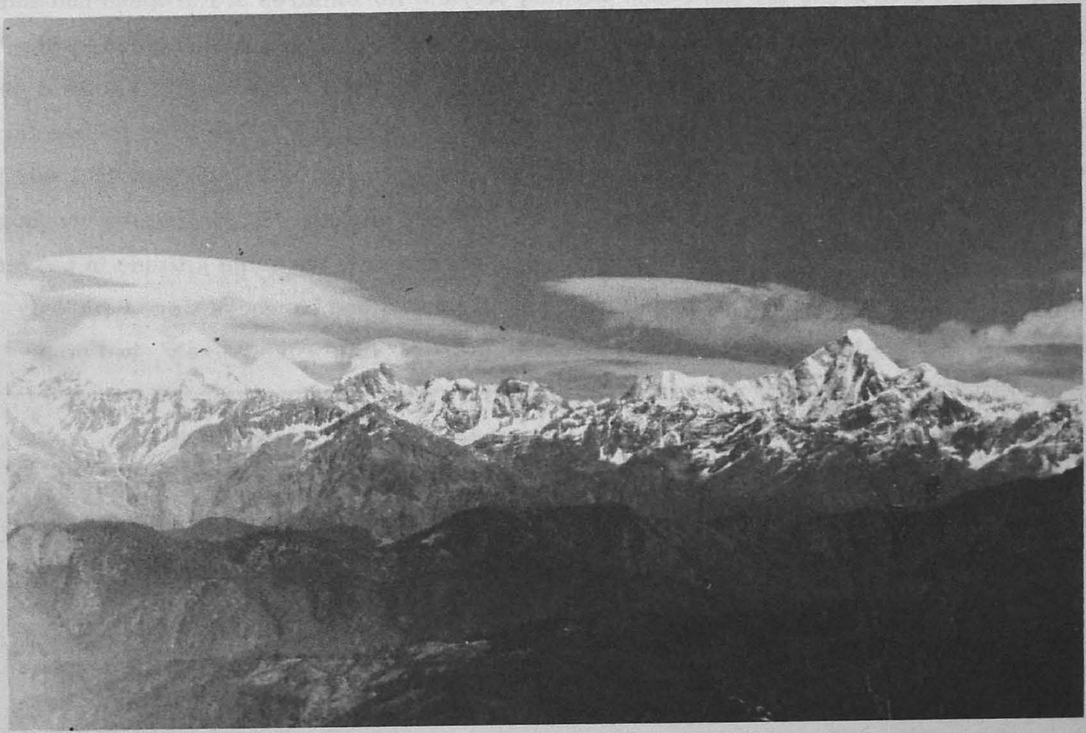

Fig. 20.--View from the governor's compound at Kausani, 7,000 feet. The Nanda Devi Peak reaches 25,660 feet.

was founded in 1887 to accommodate three battalions of native troops in the Garhwal District.[1] Dehra Dun on a ridge in the Dun Valley at 2,282 feet above sea level, was an old fortress on territory ceded to the British in the Gurkha wars and used as a military cantonment.[2] A good road, which has been closed to tourists and vacationers since the Chinese invasions of the early 1960s when this area became restricted territory, leads past the former cantonment hill-station Chakrata, 6,885 feet above sea level, on the way to Simla. Chakrata has been a cantonment since 1866, but never became a popular hill-station because of its inaccessibility. The choice of its location had been initially determined by strategic factors.

Simla, as the summer capital for the central government, was one of the first hill-stations to become overcrowded. Several satellites were built nearby. Kasauli, at 6,400 feet, compared to Simla's 7,200 feet of altitude, developed as a cantonment and convalescent home 23 years after the establishment of Simla as the first hill-station. Though not as bracing as the more elevated stations, it was, nevertheless, considered healthier than most, and convalescents from malaria were found to do well in its more agreeable rainy season with less rain and mists than at Simla.[3] Shortly thereafter, Sabathu, at an elevation of 4,500 feet, situated at the extreme edge of the Simla Range, 23 miles down the Kalka road from Simla, which had actually been kept up as a military post since the end of the Gurkha War in 1816, developed as a satellite hill-station particularly for American Presbyterian missionaries, who built a school and leprosarium there. Sonawar, at 5,000 feet, was built to house the Lawrence Military Asylum for children of European and Eurasian soldiers, previously established at Lucknow. Jutogh, Dagshai, and Solon, were built strictly as military cantonments in 1843, 1847, and 1863 respectively, as more land was acquired from the Maharaja of Patiala. Jotogh is only a few miles from the western extremity of Simla and is thus the highest of these cantonments at approximately 7,000 feet. Dagshai is 40 miles down the Kalka road at a 6,000 foot altitude. It became the headquarters of a British infantry regiment. Solon, at approximately the same altitude is ten miles nearer Simla. The ground was acquired for a rifle range and barracks were built only later. With road distances of five and eight miles from Simla respectively, two other small centers, Mashobra and Mahasu, have become satellite hill-station holiday resorts in more recent years.[1]

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[1] Though not classified as a hill-station in the Imperial Gazetteer, it is so called in the general guidebooks, e.g. A Handbook for Travellers in India, Pakistan, Burma, and Ceylon, ed. L. F. Rushbrook (20th ed.; London: John Murray, 1969), p. 280. Future reference to this work will be designated Murrays Guide, the name by which it is popularly known.

[2] Though not a true hill-station at such a low altitude, and not listed as such in the Imperial Gazetteers, it is nevertheless accepted as such in the early medical, and later geographical writings: see Spate, op. cit., p. 56. It is also mapped as a minor hill-station by Spencer and Thomas, op. cit., p. 643.

[3] Sandwith, op. cit., p. 364.

In the Dalhousie area of Punjab, two satellites developed. One is Bharwain in Hoshiapur District, a few miles from Dalhousie at a considerably lower altitude of 3,896 feet compared to Dalhousie's 6,686 feet. The other, Dharmkot, was built above a Gurkha cantonment as summer headquarters for the American United Presbyterian Mission, an example of a higher and thus less easily accessible satellite station. Both Dkarmkot and nearby Dharmasala were largely destroyed by an earthquake in 1905 and while the missionaries rebuilt their properties at Dharmkot, Dharmasala was restored by the British government as the civic center. Also in the Dalhousie area is Chamba. Though perhaps not a true hill-station it served many of the hill-station functions. Since 1846 a British Political Officer had been stationed there. His residence together with a British Club and guest house, shared the upper terrace of the ancient capital city with the raja's palace. It was thus a minor hill-station rather like Chail. Chamba, twenty miles from Dalhousie and considerably lower in altitude has warm, humid summers from June through August, and is not, therefore, a desirable hill-station. Nevertheless it has been frequented by Europeans visiting from the plains at the government level and by Scottish missionaries, who have a school and mission compound on the lower terrace of the city. Chamba is also highly advertised in modern tourist literature as an attractive holiday hill-resort.

Hill-stations in the Himalayas thus expanded rapidly in numbers as well as in size.

Hill-Stations of Peninsular India

Was the priority of locational factors in peninsular India similar to those which controlled the distribution of Himalayan hill-stations, or did differences of physical features and climate change the relative importance of these factors?

In South India the Western Ghats frequently reach peaks of over 8,000 feet. For the Madras Presidency then, finding high altitude locations in British territory for hill-stations caused no severe problems and sanatoria and cantonments were set up in the Nilgiris very soon after the first ones established at Simla.

In these hills a similar historical trend can be traced as in the five main Himalayan areas discussed above. One high-altitude center was chosen as official summer seat of the government; shortly thereafter a cantonment was set up nearby; and somewhat later a group of satellite hill-stations became established at lower altitudes but more easily accessible, or in less humid micro-climatic conditions. The political factor was absent in this southern territory as hills suitable for high-altitude stations were already owned by the Company.

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[1] Murrays Guide, op. cit., p. 261.

The suitability of the Ootacamund Plateau was noted as early as 1818 as exploring visitors climbed up from Coimbatore. The Collector visited in 1819 and in the following year considerable advertisement was given in both the Madras Gazette of 17 June, 1820, and in the next issue of the Gazette of India, where thoughts were contemplated not only of a hill-station as a convalescent center and summer season headquarters, but also of a permanent retired pensioners' home. It was considered once a medical center had been established, that "in all probability, many persons on the coast, who have withdrawn from active life, but who do not intend to return to their native country, would take up the future residence on the Nilagiri Mountains."[1] It was realized that the climate of the hill-station sites in South India differed considerably from those in the Himalayas. Blanford's climatology of 1889 pointed out:

> In all cases their atmosphere is cooler and damper than that of the neighbouring plains; but while those in the North-west Himalaya are subject to great vicissitudes of heat and cold, dryness and dampness in the course of the year, those of Southern India and Ceylon are comparatively uniform in these respects.[2]

Much was made of the equability of the Nilgiri climate. From records taken in the 1830s and again in the 1850s it was discovered that:

> The range of the temperature of the air during the hottest hours of the day throughout the whole year, appears to be not quite nine degrees; at the coldest hours of the night, only 9.15 degrees; that is, the hottest hours of the day, whether in summer or in the depth of winter, do not vary more than nine degrees. The extreme variation from the hottest day temperature to the coldest night temperature during the whole year (average of seven years) was only 21.25 degrees.[3]

The clear, dry, bracing northeasterly winds of winter, so enjoyed by the residents of today, were considered during these early hill-season years unhealthy, especially in their later months from January to April when they blow up "air which has lain stagnant on the plains of India during some previous months." These "prove to be most trying to the invalid" whereas "the cold, moist state of the atmosphere during the monsoons does not appear to be prejudicial to the European invalids when sufficient attention is paid to the judicious adaptation of clothing to the state of weather," even though heavy rains fall from early June through September, often with intense thunderstorms. One feels that only an Englishman could have come to these conclusions, and it would appear that fear of poisonous miasmas still underlay his thinking.

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[1] H. B. Grigg, A Manual of the Nilagiri District in the Madras Presidency (Madras: Government Press, 1880), p. 211.

[2] Blanford, op. cit., p. 125.

[3] This and the short quotations in the following paragraph are taken from Grigg, op. cit., pp. 47, 50-51.

The first house in Ootacamund on its plateau at 7,400 feet, surrounded by rolling downs of springy turf, woods, and streams, and sheltered on all sides by four peaks each over 8,000 feet high, was built in 1821, and by 1827 Ooty, as it is popularly known, was formally established as the sanatorium of the Madras Presidency. The military cantonment was not built at Ooty, but twenty miles away and a little over a thousand feet lower at Wellington. In 1857 the barracks were extended to become the headquarters of the Colonel commanding the Southern Brigade, and thus the principal military sanatorium of the South India European regiments. Roads and carriage ways were built around the plateau linking the hill-stations as well as the plains from several directions. A mountain railway of about twenty miles from Mettupalaiyam in Coimbatore District, leads to within one and a half miles of Wellington. Since it was built in the early 1830s another hill-station developed at Coonoor, the end of the railway line. Coonor, 6,000 feet in altitude, lies in the southeastern end of the Nilgiri Plateau, and is thus subject to more rains from the north-east monsoon than from those of the south-west.

Coonoor owes its existence to easier accessibility, while the distribution of the other Nilgiri satellites was more dependent on micro-climatic factors. A further satellite hill-station was founded in 1830 in the northeastern plateau of the Nilgiris. Kotagiri, like Coonoor and Wellington, is lower than Ooty, about 6,500 feet above sea level, and both warmer and drier than Ooty. Here the *Tasildhar* (local judge) held fortnightly criminal sessions, and the Basel Lutheran missionaries built a hill-station for their members.

These southern hill-stations with their open downs and drives offer greater possibilities of outdoor exercise compared to the steeper and more cramped hill-stations on the Himalayas. In 1867 the British inaugurated an annual Ootacamund Hunt, to chase the hardy and fast hill-jackals around the downs, with foxhounds especially imported from England (see Fig. 21). Coffee, tea, and cinchona estates thrive well on the hills as do also many types of European fruits and vegetables.

Micro-climatic factors, as well as altitude and personality preferences, were to some extent considered in the stations further south. In 1845, Kodaikanal was started as a hill-station in the Palni Hills at 7,375 feet. Though the hills were surveyed in 1821 and the Madurai collector camped in the area in the early 1840s, its first permanent settlements were built by the American Madura Mission. The Palnis form an east-facing spur of the Western Ghats, and Kodai receives three quarters of its rain in winter rather than in summer. The Anaimalais on the westward slopes of the Ghats receive the full force of the southwest monsoon and are very wet from early June through September. No true hill-stations have been built on them, but Munnar, 4,500 feet above sea level, sixty miles by a back road from Kodaikanal, has become the center of the High Range tea, coffee, and cardamom estates. In the early 1900s a cable ropeway was set up from estate areas near Munnar to the plains, as a cheap and easy transport method for hill-estate products. With

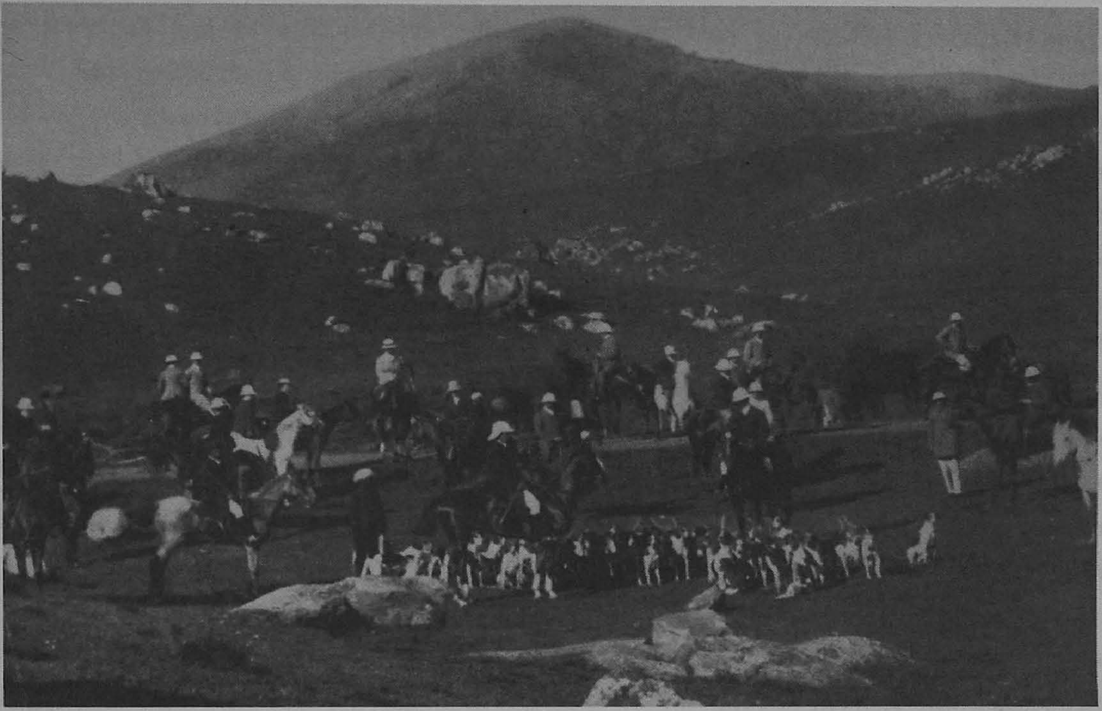

Fig. 21.--Meet of the Ootacamund Hunt, 1896. (Reproduced by the kind permission of the Hon. Mrs. C. Fortescue.)

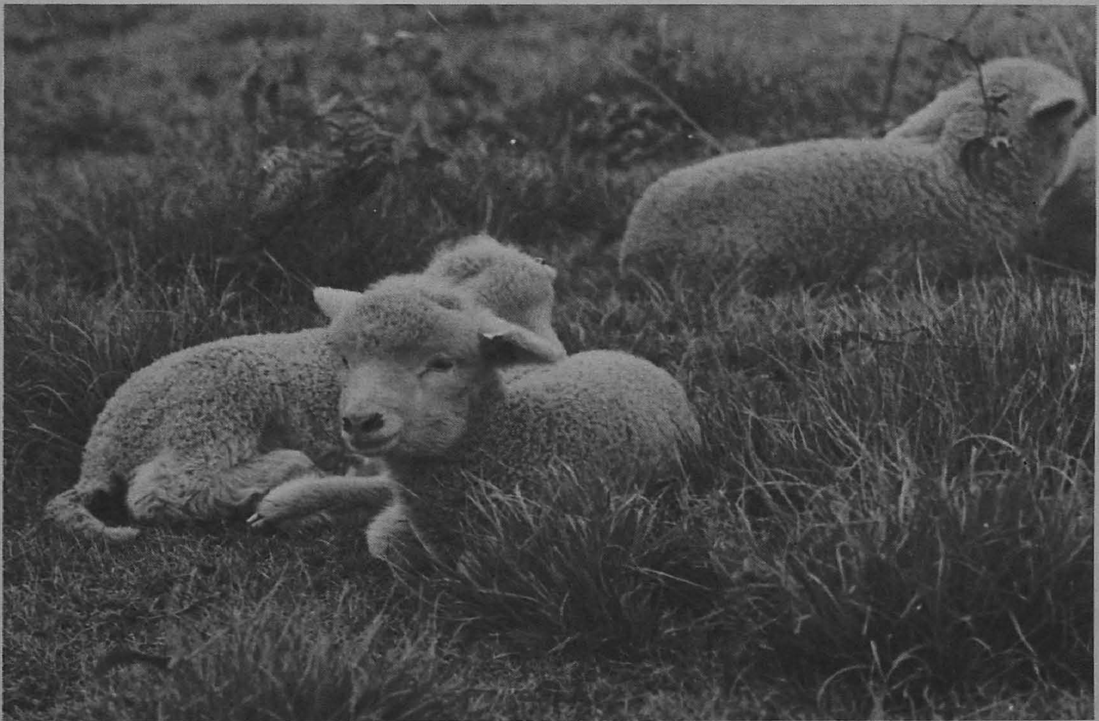

Fig. 22.--Corriedale lambs at Mannavanur, Palni Hills. Picture taken in February, 1971, when the lambs were four weeks old. Their ancestors were brought to Kodaikanal in the mid-1960s from Australia.

its English Club and recent Indian clubs, boating, golf-course, hotels, schools, and churches, established originally by Europeans and now also similarly serving the Indian community, Munnar functions as a hill-station and should qualify as such, even though it has seemingly never been included in a list of hill-stations.

For the rest of peninsular India there are greater problems with regard to the choice of suitable locations for hill-stations. Nowhere else does the Deccan with its Eastern and Western Ghat rims, rise higher than 3,000-5,000 feet. Hill-stations nevertheless grew rapidly, and many of them became extremely popular especially where they were close to densely populated urban areas. A center established on a spur or ridge often became known as a hill-station even though it sometimes had little to differentiate it from the surrounding plains. As Spate pointed out:

> Places intermediate between hills and plains may be cooler than the latter but, unless they occupy an isolated prominence, may be more oppressive, as they are often in valleys without much air movement; such as Dehra Dun (U.P.) and Peradeniya (Ceylon), both in basins at about 1,800 feet. Many people find these more trying than Delhi or Colombo.[1]

In the Shevaroi Hills of the Eastern Ghats and so little more than half the distance from Madras to the Nilgiris or Palni Hills, a small hill-station grew at Yercaud at the highest point of the hills, with an elevation of 4,828 feet. The hills are beautiful though dry in summer as the rains come almost entirely in October. It has a natural lake and coffee planting has been encouraged in its hills. It receives great numbers of short-term local visitors especially from the nearby city of Salem.

Apart from the major southern hill-stations in the Nilgiris and at Kodaikanal, many small centers, less significant than Yercaud or Munnar, became known as hill-stations and are so classified in the Imperial Gazetteers of India. In the present state of Tamilnad these include Courtallam (or Kuttalam) almost at the southern tip of the Western Ghats near the Tenkasi Gap. Though only 1,450 feet above sea level it has the climate and flora usually associated with higher elevations as it receives rain and cool breezes of the summer monsoon which this far south already sets in during the last week in May. A series of waterfalls with water temperatures between 72-75°F. affords medical therapy to invalids and the center has considerable reputation as a spa. It was a favorite resort of European officials throughout the Presidency in its earlier years, and of Indians of good position now.

Coimbatore city itself is listed as a hill-station in the 1908 gazetteer. Though only 1,300 feet above sea level it was early the headquarters of the district staff, Forest Conservation, Deputy Inspector General of Police, Superintending Engineer, Inspector of Schools, and a company of Nilgiri Volunteer Rifles. In 1908 it had been described:

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[1] Spate, op. cit., p. 56.

"Coimbatore is now one of the most desirable stations in the Presidency."[1] In 1970 it is now impossible to consider that this large, hot, industrial city of an estimated almost half-million inhabitants, could ever have been thought of in terms of its being a hill-station. Its wealthier inhabitants themselves frequently visit the Nilgiris and Kodaikanal during the hot summer months.

On a south-facing ridge of the Mysore Plateau in North Arcot District, Palmaner, at 2,247 feet above the plains, has a slightly cooler climate than the lower parts of the district. It was, accordingly, a sanatorium in the early years for the officials in North Arcot and before the Western Ghats were opened up, resorted to by Europeans from Madras.

Three more centers, presently in the state of Kerala, were also classified as British hill-stations in the early years of this century. They are: Alwaye, Pirmed, and Ponmudi. The virtues of Alwaye were already recognized by the Portuguese who occupied this section of the west coast in the sixteenth century. The British in the nineteenth century claimed it for "the finest summer river bathing in South India."[2] Here at the western end of a pass through the Western Ghats at an altitude of less than 1,000 feet, the waters of the Periyar river are claimed to have medicinal properties which have helped to make Alwaye, according to the modern Kerala District Gazetteer:

> a haven for holiday makers and others who wish to escape the scorching heat of the surrounding plains . . . All along the river front beautiful bathing ghats are provided and it is a familiar spectacle to find men and women, young and old, making for the riverside from the early hours of the day till very late in the night.[3]

Alwaye has grown into a thriving modern city, and driving through its warm, humid streets one is likely to remain quite unaware of its hidden beauty along the river, and to miss the realization that this was once considered a hill-station.

Pirmed is considerably further inland and higher up along the same Madurai-Ernakulam road as Alwaye, but on the Pirmed range at 3,500 feet altitude in the Cardamom Hills which here soon join the Anaimalai-Palni east-west spur of the Western Ghats. Like Munnar, it was the meeting place for European tea estate owners, though it never developed into the type of recreational center that Munnar did. However, it was the headquarters of the Magistrate and Superintendent of the Cardamom Hills, and thus became classified as a hill-station. It was originally a holy site known as Pir Medu (Pir's Hill) after an ascetic Muslim saint Pir Muhammad. Today it is a typical Indian village in the hills with travellers' bungalows but few hill-station facilities.

Ponmudi is a picturesque forested hill containing rubber and tea estates as well as two government sanatoria at an altitude of about 3,000 feet. It is 38 miles inland from the city of Trivandrum, easily available on a good motor road.

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[1] Imperial Gazetteer of India, X, 372. [2] Ibid., V, 269.

[3] A. Sreedhera Menon, State Ed., Kerala District Gazetteers: Ernakulam (Trivandrum: Government Press, 1965), pp. 821-22.

Still in the southern Deccan, but a little to the north of Tamilnad and Kerala, two minor hill-stations were created in the Eastern Ghats, in the present state of Andhra Pradesh. They are Horsley Hills and Madanapalle. Three others developed in the central Mysore Deccan: Bangalore, Nandidrug, and Ramadrug. Horsley Hills, 4,100 feet above sea level, was so named after a former British Collector who "discovered" its attractiveness and built himself a house there in 1870. Instead of the bare rock-covered hill-top so often found in this district, Horsley Hills is grass-covered and the valleys are full of trees. Madanapalle, only nine miles away, but on a lower promontory, 2,250 feet high, became the headquarters of the engineering executive and police superintendent. It was a minor hill-station for missionaries of the London Mission and a favorite retirement home for Indian civil servants.

In Bangalore, 3,000 feet above sea level in a central location on the Mysore Plateau, a permanent British cantonment was established in 1809 on the removal of the garrison from Srirangapatan, and its British institutions are still apparent even though it has now grown to be a "million city." However, though it has a considerable number of retired British and Anglo-Indian officials, as many of them as can afford to now visit a higher hill-station during the summer months. About forty miles north of Bangalore is Nandi Hill, at an elevation of 4,850 feet, site of Nandidrug Fort which had been captured by Lord Cornwallis in 1791 and because of its salubrious climate in comparison to the plains it overlooks, became a hot-season resort for European officers from Bangalore during the hill-station building era. Ramadrug (or Ramagud), a 3,500-foot high hill-station near Bellary, attracted the attention of East India Company officials as early as 1855 because of its mineral waters. Barracks were built at that time, and a hospital large enough to house seventy soldiers.

A similar historical movement can also be traced in the Bombay Presidency, though here problems of altitude and climate were considerably greater, as well as political problems of land ownership. Compromise was affected so that two hill-stations were official government summer headquarters at different times: Poona and Mahabaleshwar.

Easily accessible from Bombay and British since 1818, the ancient city of Poona became the western military capital of the Deccan. Though less than 2,000 feet in altitude, it has a light rainfall from May to October, which while not unpleasant, helps to give it a cool atmosphere during the hot season. As well as cantonment it became the seat of the government of the presidency from June to October.

No matter how unpleasant the rainy winds of the summer months might become at hill-station altitudes, they were considered healthy over a century ago, whereas even at Poona's gentle heights, the dry northeast winds were considered dangerous. Thornton reported in 1857:

> The easterly winds are characterized by extreme dryness, the lips, and the exposed parts of the skin are cut, and become harsh and scaly . . . and to sleep exposed to the easterly wind, is to risk the loss of a limb, or a whole side.[1]

The winds are westerly much of the year and Thornton concluded: "In general, however, the climate is not unhealthy, and the cantonments at Poona are found to be remarkably suited to the European constitution."

In later years Mahabaleshwar developed into the principal hill-station of the Bombay Presidency. Situated at an altitude of 4,500 feet on a spur of the Western Ghats in the Satara District, it was established by the Governor of Bombay in 1828 after he obtained the site from the Raja of Satara in exchange for another territory. Mahabaleshwar formed the hill retreat for the Governor of Bombay with his retinue from March to June. Though the hill-station was dusty and not at its best at that time, when its streams and waterfalls were dried, the grass parched, and the magnificent views obstructed by haze and glare, it nevertheless offers a refuge from the intense heat of the plains. With the first burst of the southwest monsoon in June, the visitors, residents, and shopkeepers left the hill-station _en masse._ Mahabaleshwar has exceptionally heavy rains in the summer and it is claimed is rivalled only by Cherrapungi in the Assam Hills. Many visitors returned in October after the rains, when the hill-station was finally very beautiful.

Several satellite hill-stations developed in these western hills. Twenty miles southeast of Poona at an elevation of 4,472 feet, Purandhar Hill became a cantonment for European troops in the Poona division of the Western Command. Another military sanatorium was established forty miles northwest of Poona at Khandala which also became a missionary hill-station with four European boarding schools. An equal distance from Bombay, Lonavala was established primarily for railway officials. It contained an English school, several hotels and a resident doctor, during its term as British sanatorium.

Panchgani and Matheran became small civic hill-stations. Panchgani is quite high, with an altitude of 4,378 feet. It lies approximately eleven miles east and to the lee of Mahabaleshwar on a less exposed ridge some 200 feet lower. It thus escapes the severe rains of the outer range, receiving a total of only 56 inches annually compared with the 280 inches of Mahabaleshwar. It is, however, comparatively warmer and its early afternoon temperatures reach 96°F. by March. It was established in 1862 as a satellite of Mahabaleshwar. Matheran is a much lower hill-station at 2,460 feet. First discovered by a Bombay civil servant in 1850 and being only thirty miles east of Bombay, it forms a local retreat for many of Bombay's citizens, an especially favorite center for the city's Parsee population. In Savantvadi District in the southern part of the Presidency, near Goa, Amboli became a small British hill-station for officers stationed in the south of the Bombay region. Fourteen miles north of Aurangabad city, on a ridge 2,732 feet above the surrounding plains lies Khuldabad. It was a Muslim stronghold and contains the tomb of Aurangzeb, last of the great Mughal emperors. After it was captured by the British it became the taluk headquarters and a sanatorium for soldiers was built in the latter part of the nineteenth century.

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[1] Thornton, _op. cit._, p. 775.

In the Deccan northwest the British owned no hill territory in the mid-nineteenth century. They leased the hill on which Mount Abu stands on a permanent lease from its Rajput owner in 1845, in order to build a hill-station for the convenience of the British Resident of Rajputana. In 1847 sixty ladies and gentlemen assembled there to partake for the first time of the presumed restorative powers of the climate. The center, 3,822 feet up in the Aravalli Range is an ancient religious shrine. Its name means Ar-Buddha, or Hill of Wisdom, and it contains the carved marble Dilwara temples built in the eleventh and thirteenth centuries, which have been famous pilgrimage sites since that time. The hill has been identified as the Mons Capitalia mentioned in Pliny. In more recent years it received the palaces of several Rajput princes, and in the British occupation many private residences, polo and golf courses, with the usual hill-station recreational activities, and a school for the children of soldiers. Another small, low-altitude hill-station in the northwest was Taragath. Its fort which towers 2,855 feet above Ajmer city, was captured and dismantled by the British in 1832 and a sanatorium for European troops built in 1860. Containing the shrine of Saiyid Husan, it had long been a Muslim pilgrimage center.

These were the only two hill-stations in the northwest Deccan and they represented outposts of British occupied territories in India.

The major British hill-station for the Central Provinces was Pachmarhi. It lies on a plateau of the Satpura Range, one of the local high spots at 3,500 feet above sea level, in open forest land. "Discovered" by an army captain who built himself a shooting box on the site in 1857, the government acquired the property in 1869. Soon the Chief Commissioner began to reside there in summer and it became the hot-season military cantonment for eight months of the year. The low elevation, however, only offers partial relief from the heat. May, the warmest month, has an average temperature of 85°F. and sometimes the daily figures for early afternoons surpass the 100°F. point. Furthermore, heavy rains fall with the southwest monsoon. The station receives 77 inches, almost all of it between June and September. A further hill-station, primarily a cantonment, developed in similar conditions somewhat south of Pachmarhi at Chikalda. Though developed earlier, in 1839, it remained smaller, presumably because of less easy accessibility. Its May mean temperature is 86°F. a little higher than Pachmarhi, even though its altitude is a little greater at 3,664 feet. Its rainfall, on the contrary is slightly less.

In the Chota Nagpur region of the northeast Deccan it was also difficult to find suitable hill-stations, and European cantonment centers became known as hill-stations if they were located in relatively high plateau areas. Because of this, micro-climatic factors became extremely important in this area. Ranchi and Hazaribagh may in many ways be compared with Bangalore and Coimbatore. Ranchi at 2,138 feet altitude, became a European center around the cantonment and civil station organized in 1840. It also became a chief station for Christian missionary work. Hazaribagh, at a yet lower elevation, 1,750 feet, was a large village until taken over for a British cantonment in 1780. During April and May the hot west winds blow at Hazaribagh as they do at stations at lower levels, but as soon as the rains set in during the latter half of June, the afternoon temperature falls 13° or 14°F. From then on average daily temperatures do not rise above 78°F., and the movement of air across the plateau makes the station comparatively cool and pleasant. At the turn of this century it was a popular sanatorium to which tubercular patients were sent. Sandwith described the means of transport used to convey the sick soldiers:

> It is 40 miles distant from the nearest railway station, conveyance along a good road being by a 'push-push', a kind of small bathing machine, in which the traveller can lie down on a mattress and be drawn by coolies.[1]

In 1859 negotiations were made with the Raja of Palganj for one of the surrounding hills of the Hazaribagh Plateau. This was a pilgrimage center, Parasnath Hill, with a temperature 10° to 15°F. cooler than the central plateau. By 1864 the first invalids were sent up. However, it was not possible to keep up the hill as sanatorium owing to an insufficient water supply.[2] Nearer to Calcutta though still in the Chota Nagpur Hills, Madhupur, became a health resort as many Calcutta government officials built homes there for use in the summer months and also as permanent retirement homes for pensioners. Madhupur has stayed a minor center as the official government multi-purpose hill-station remained Darjeeling.

In Assam the administrative headquarters of the Khasi and Jainta Hills was in Cherrapunji until 1864 when it was moved to Shillong. Cherrapunji is notorious as probably the rainiest place on earth with an annual average precipitation of 425 inches, most of which falls in the summer months. A record rainfall of 905 inches shortly before, may well have precipitated the move of administrative center to Shillong. Cherrapunji is still the center for the Welsh Presbyterian Mission. Though only fifty miles inland from Cherrapunji, Shillong is comparatively sheltered from the monsoon, showing the importance of micro-climates. It expects only 80 inches of rain, and the claim has been made that sunny intervals are so frequent that it is very rare for visitors to be kept indoors by rain for an entire day. Though not of great altitude, about 5,000 feet, it has been free of typhoid, cholera, and malaria, those tropical diseases which have frequently been known at this altitude.[1] Shillong is surrounded by rolling downs, reminiscent of the southern hill-stations; visitors enjoy facilities for riding and driving, polo, golf, and cricket. It is linked to Gauhati in the Brahmaputra Valley by a 63-mile metalled ghat road, and was the summer capital for the British government of Assam in Gauhati from 1864 until Independence.

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[1] Sandwith, op. cit., p. 362.

[2] W. W. Hunter, ed., A Statistical Account of Bengal, Vol. XVI: Districts of Hazaribagh and Lohardaga (London: Trübner & Co., 1877), p. 31.

Modern Indian Hill-Stations

How have the functions of the hill-station changed since Independence? Which principles now govern hill-station distribution?

Despite its British origins, the hill-station phenomenon has become part of an Indian tradition. Many Indians stay in the hills for several months and continue in the exact hill-station tradition as started by the British, giving continuance to the English Club, the Golf and Boat Clubs, and other recreational activities together with Europeans who are still to be found there. One can also notice recent changes in the hill-station character. The most apparent is in the increasing numbers of short-time participants and the larger sizes of groups going up to the hills together. With improved transport systems, the ever-increasing numbers of private automobiles, and the facility of contracting buses, hill-stations have become far more accessible, not only to the Indian elite, but also to the economically middle classes, a factor which may well have played a significant role in the continuance of the hill-station. Groups of holiday-makers often ride up in hired buses and stay only a few days, or even just a few hours. For many people the hill-station has become a vacation resort which happens to be in the hills, as the hills are pleasant places to be during the hot season. Such tourism is strongly encouraged by both central and state governments because of the resultant increase of funds brought in with the tourists. This aspect, however, radically changes the definition of a hill-station to include any hill-resort visited by tourists. Such tourists may be care-free vacationers, people with a health problem, or religious pilgrims. A summary of "Tourist Traffic to the Hill-Stations" in a post-Independence reference work on India summarizes the situation as follows:

> Apart from foreign tourist traffic, special steps have been taken to promote internal tourist traffic to Kashmir and other hill-stations . . . There has been considerable increase in the number of visitors to that state [Kashmir] during the year. The number of visitors rose from 6,783 during the previous year to 10,579 in 1951 and 13,000 in 1952. At other hill-stations the formation of Tourist Bureaus consisting of various tourist interests has been encouraged. Such bureaus have already started functioning at Mussoorie, Darjeeling, Ootacamund, Naini Tal, Kodaikanal, Simla and Ranikhet.[2]

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[1] Sandwith, op. cit., p. 363.

[2] G. D. Binani and T. V. Rama Rao, eds., India at a Glance: A Comprehensive Reference Book on India (Calcutta: Orient Longmans Ltd., 1953), p. 1668.

Two new classifications of hill-station categories are thus necessary to incorporate the new definition: (6) the multi-functional tourist hill-station and (7) the single-purpose tourist hill-resort. The former is in many ways comparable to the British hill-station, but it was not created as a tropical hill-station by Europeans, and was never perceived in terms of a health sanatorium. The latter is often a pilgrimage site, bird sanctuary, or wild game preserve and not a true hill-station. However, in the course of Indianization, distinctions are becoming less clear between the original hill-station functions as health and recreational centers and the recent tourist functions.

It is only under this latest definition of the hill-station as a tourist hill-resort, that the holiday centers in Kashmir can, in fact, be classified as hill-stations. The State of Kashmir and Jammu had hill-resorts two centuries before the British set up Simla. The Mughals, who had come down from the Afghan Hills to invade India, set up many beautiful pleasure-gardens. Akbar laid out Nasim Bagh; Jahangir built Shalimar, Achhabal, and Verinag; and Shah Jahan terraced Chashma Shahi (Fig. 24), perhaps the loveliest flower-garden of them all. Nasim Bagh, Shalimar, and Chashma Shahi are now part of the capital city Srinagar, accessible by boat through the backwater system as well as along the road. Because of the long journey involved to reach Kashmir, its centers were not popularly visited by the British as were the nearer Himalayan resorts. Fodor wrote:

> Since only the higher officials in days gone by could afford the time and expense involved in making the journey, Kashmir has escaped being Europeanized and never became a 'hill station' . . . It was ruled over by the Maharaja of Kashmir and Jammu, although there was a representative of the British Raj, known as the Resident. Yet, rightly, no European was allowed to own land in the State or to build.[1]

Nevertheless, vacation centers were developed during the time of British influence in India for the type of recreation enjoyed by Europeans--camping, hunting, hiking into the mountains on foot or on horseback. Western-type hotels and camp sites grew not only in Srinagar, but also in other centers: Gulmarg, 8,500 feet in altitude, which claims the world's highest golf course; Pahalgam, 7,200 feet, and Sonamarg, 8,750 feet, both excellent camping centers developing winter sports. Since Independence another new mountain resort has developed in Kashmir. It is Yusmarg, 8,000 feet in altitude, opened in the early 1960s near the West Pakistan frontier (Fig. 23). These resorts certainly fulfill the functions of multi-functional tourist hill-stations.

The single-purpose tourist hill-resort category also makes it necessary to include other hill-resorts which are frequented by visitors and highly advertised by tourist agencies. Linked with the British hill-station areas as followed in this chapter, these include: Manali, Kangra, and Kulu near Dalhousie; Kotgarh and Narkanda near Simla; Kedernath

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[1] Eugene Fodor and W. Curtis, Fodor's Guide to India (Tokyo: Fodor's Modern Guides, Inc., 1965), p. 346.

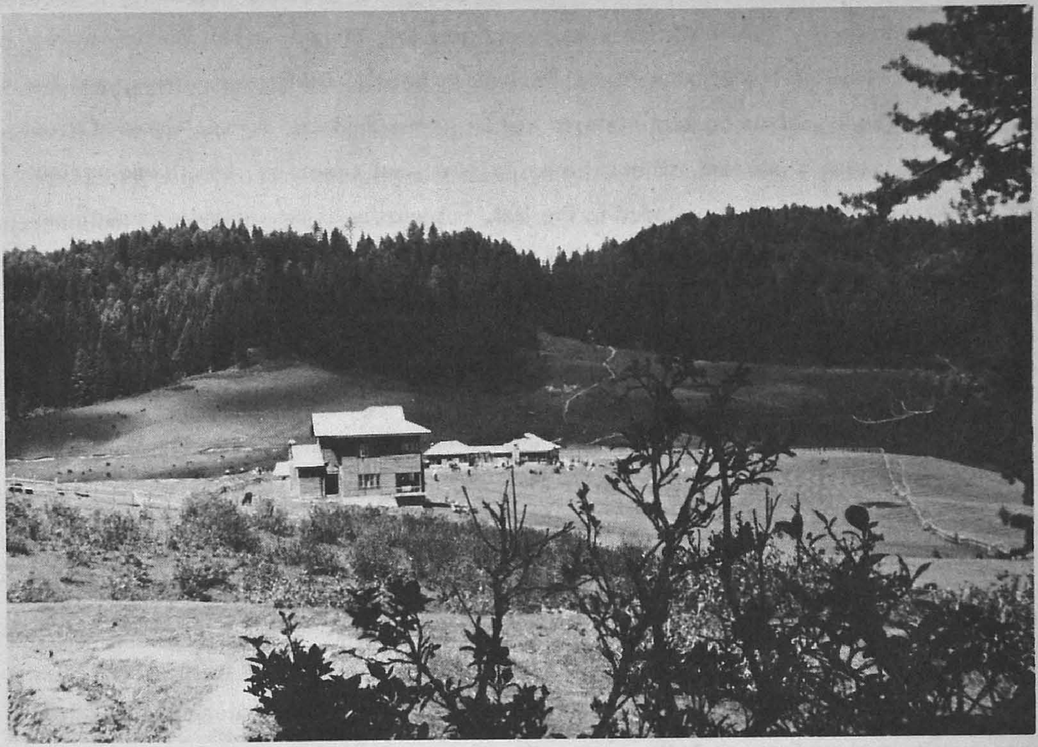

Fig. 23.--A modern Indian hill-station has been established at Yusmarg in Kashmir, at 8,000 feet elevation.

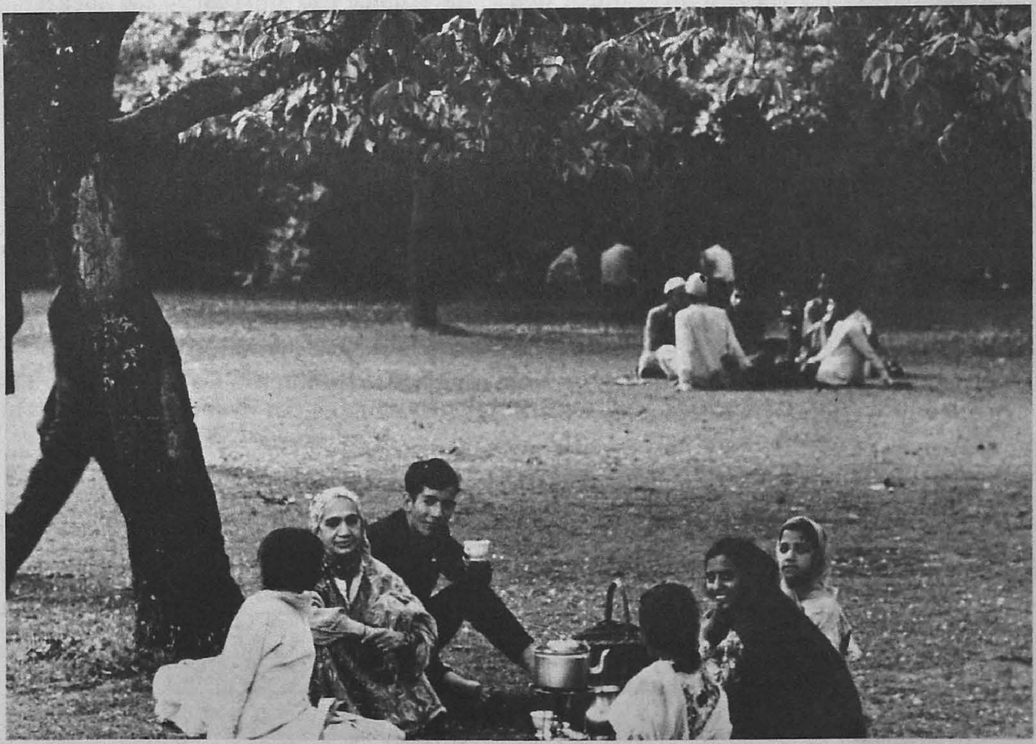

Fig. 24.--Kashmiris enjoying a Sunday relaxation at their own hill-station. Chashma Shahi, Srinagar, 5,300 feet.

and Badrinath, further into the mountains from Mussoorie; Baijnath, Bageshwar, Bhowali, and Mukteshwar in the Kumaon Himalayas near Naini Tal; Singarh in the Bombay area; Kenmangudi and Biligiri in Mysore State; Periyar in Kerala; Dibrugahr, Jowai, and Haflong in Assam.[1] These include ancient historic and religious centers, scenic areas of great beauty and of geologic interest, tribal camps, wild animal reserves, health and agricultural research centers. Not included in the list, but worthy of consideration are those high-altitude dam and reservoir sites which, with their ornamental gardens and colored lights, have became very popular recent tourist centers.

Certainly worthy of removal from the list of hill-stations are those low-lying centers which once served as cantonments for British soldiers and which have developed into multi-purpose towns. This would include: Dehra Dun, Ranchi, Hazaribagh, Parasnath, Madhupur, Poona, Bangalore, Ramadrug, Pachmarhi, Chikalda, Alwaye, and Coimbatore. They have been included in the map for historical reasons (see Fig. 25).

Perhaps the most exciting development in connection with hill-stations is the proposed new government hill-station for the State of Gujarat at Saputara. To incorporate it necessitates the creation of a further category: (8) the Modern Indian hill-station. The proposition to build such a hill-station shows the current value and understanding of the need for hill-stations from an Indian rather than from a British point of view:

> Saputara, a beautiful plateau in the district of Danga, in Gujarat State, will soon have the distinction of becoming the first full-fledged Hill Station after Independence, in the country . . . For a state which lies in the tropics and adjacent to the desert area, a hill resort becomes a necessity. Immediately after the formation of the new state in 1960, the question of a hill station in Gujarat was taken up in all seriousness . . . Saputara was finally selected for the development as a hill resort.[2]

The British hill-station involved a great amount of organization, and plans for this Indian hill-station are also complex:

> Saputara is expected to be the first [modern Indian] hill resort which will have planned development. A small committee of top state Government Officials including architects, surveyors and engineers has evolved a plan of the prospective township . . . Twenty four units of Holiday Home are planned to be constructed at Saputara . . . Alongside holiday homes, dormitories are also planned . . . These homes will be fully equipped with necessary furniture for a comfortable stay and utensils will be provided . . . The master plan has an adequate provision for private persons to construct their houses.

Nor have possible recreational needs been overlooked. Some of them, parks, museum, library, and public hall are reminiscent of the British hill-station. Others, such as ethnological centers are indigenous.

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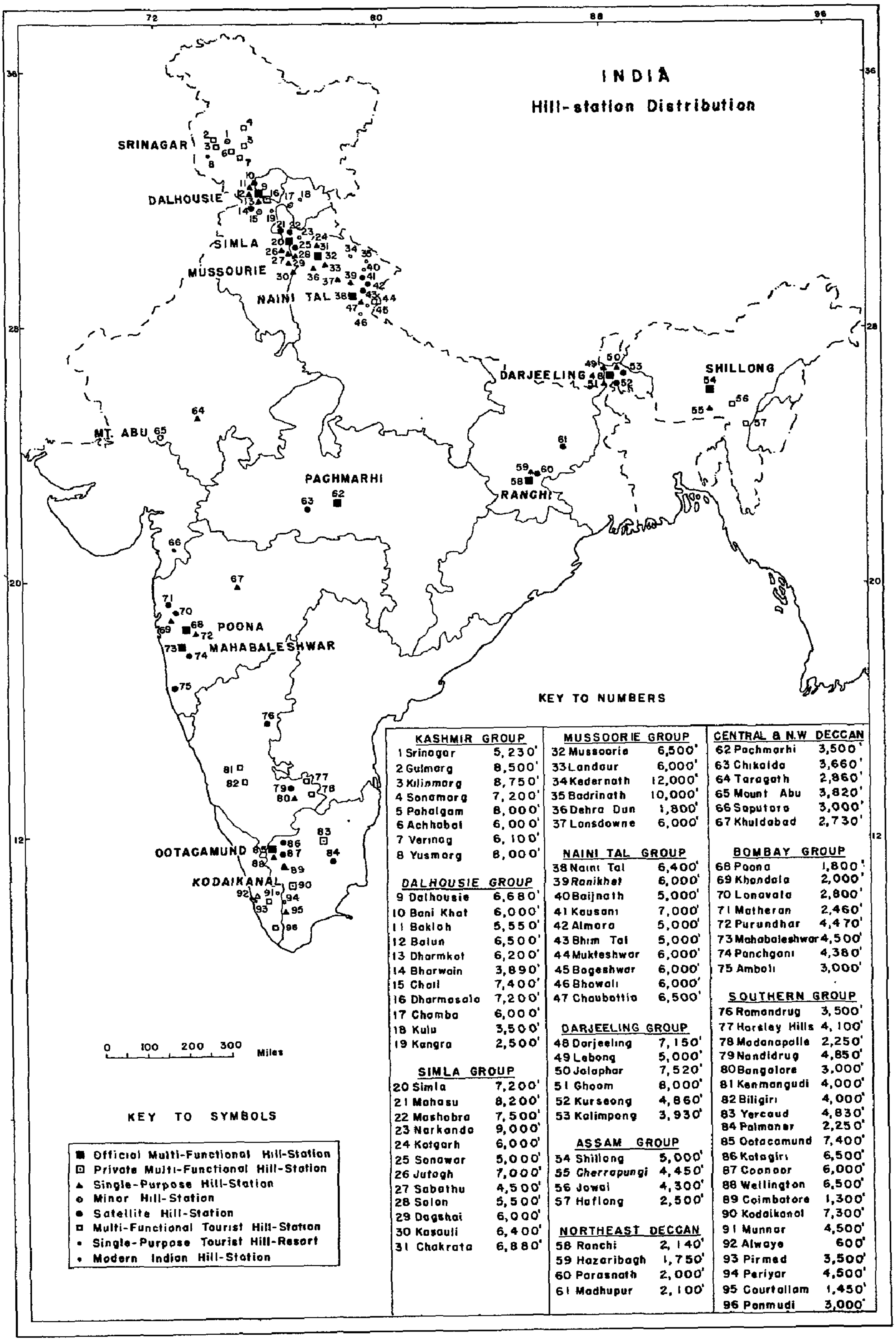
[1] These have all been included in literature sent by state Tourist Agencies upon request for information on hill-stations.

[2] Directorate of Information, Gujarat State, Hill Station in Gujarat, Saputara (Ahmedabad: Government Central Press, 1967), pp. 1-6.



KEY TO SYMBOLS

- ■ Official Multi-Functional Hill-Station
- ⊡ Private Multi-Functional Hill-Station
- ▲ Single-Purpose Hill-Station
- ⊙ Minor Hill-Station
- ● Satellite Hill-Station
- ☐ Multi-Functional Tourist Hill-Station
- • Single-Purpose Tourist Hill-Resort
- • Modern Indian Hill-Station

KEY TO NUMBERS

KASHMIR GROUP	
1 Srinagar	5,230'
2 Gulmarg	8,500'
3 Kilinmarg	8,750'
4 Sonamarg	7,200'
5 Pahalgam	8,000'
6 Achhabal	6,000'
7 Verinag	6,100'
8 Yusmarg	8,000'

DALHOUSIE GROUP	
9 Dalhousie	6,680'
10 Bani Khat	6,000'
11 Bakloh	5,550'
12 Balun	6,500'
13 Dharmkot	6,200'
14 Bharwain	3,890'
15 Chail	7,400'
16 Dharmasala	7,200'
17 Chamba	6,000'
18 Kulu	3,500'
19 Kangra	2,500'

SIMLA GROUP	
20 Simla	7,200'
21 Mahasu	8,200'
22 Mashobra	7,500'
23 Narkanda	9,000'
24 Kotgarh	6,000'
25 Sonawar	5,000'
26 Jutogh	7,000'
27 Sabathu	4,500'
28 Solon	5,500'
29 Dagshai	6,000'
30 Kasauli	6,400'
31 Chakrata	6,880'

MUSSOORIE GROUP	
32 Mussoorie	6,500'
33 Landour	6,000'
34 Kedarnath	12,000'
35 Badrinath	10,000'
36 Dehra Dun	1,800'
37 Lansdowne	6,000'

NAINI TAL GROUP	
38 Naini Tal	6,400'
39 *Ranikhet*	6,000'
40 Baijnath	5,000'
41 Kausani	7,000'
42 Almora	5,000'
43 Bhim Tal	5,000'
44 Mukteshwar	6,000'
45 Bageshwar	6,000'
46 Bhowali	6,000'
47 Chaubattia	6,500'

DARJEELING GROUP	
48 Darjeeling	7,150'
49 Lebong	5,000'
50 Jalaphar	7,520'
51 Ghoom	8,000'
52 Kurseong	4,860'
53 Kalimpong	3,930'

ASSAM GROUP	
54 Shillong	5,000'
55 *Cherrapungi*	4,450'
56 Jowai	4,300'
57 Haflong	2,500'

NORTHEAST DECCAN	
58 Ranchi	2,140'
59 Hazaribagh	1,750'
60 Parasnath	2,000'
61 Madhupur	2,100'

CENTRAL & N.W DECCAN	
62 Pachmarhi	3,500'
63 Chikalda	3,660'
64 Taragath	2,860'
65 Mount Abu	3,820'
66 Saputara	3,000'
67 Khuldabad	2,730'

BOMBAY GROUP	
68 Poona	1,800'
69 Khandala	2,000'
70 Lonavala	2,800'
71 Matheran	2,460'
72 Purundhar	4,470'
73 Mahabaleshwar	4,500'
74 Panchgani	4,380'
75 Amboli	3,000'

SOUTHERN GROUP	
76 Ramandrug	3,500'
77 Horsley Hills	4,100'
78 Madanapalle	2,250'
79 Nandidrug	4,850'
80 Bangalore	3,000'
81 Kenmangudi	4,000'
82 Biligiri	4,000'
83 Yercaud	4,830'
84 Palmaner	2,250'
85 Ootacamund	7,400'
86 Kotagiri	6,500'
87 Coonoor	6,000'
88 Wellington	6,500'
89 Coimbatore	1,300'
90 Kodaikanal	7,300'
91 Munnar	4,500'
92 Alwaye	600'
93 Pirmed	3,500'
94 Periyar	4,500'
95 Courtallam	1,450'
96 Ponmudi	3,000'

Fig. 25

> Enough forethought has been given to provide suitable recreation at the hill station. Apart from parks and gardens that will be laid out for general public, a special children's park with facilities for indoor and outdoor games, a music hall, small library, etc. has been planned. For grownups, it is proposed to have a stadium where sports and games can be arranged. The hill station being in the Adivasi area, it is proposed to put up a museum which will contain characteristic costumes, musical instruments, folklore, etc. of Adivasis of Gujarat in general and of Dangis in particular.

India has several wild game sanctuaries. The combination of modern hill-station with game reserve is perhaps unique.

> The forest area in Danga District has quite a large number of game such as tigers, sambhars, deer, chittal, chettahs, wild boar, etc. The state government is proposing to create a game sanctuary at Bardipada area and adopt measures to protect wild life.

Arrangements for supplies of food and other necessities are not forgotten.

> Arrangements are underway to grow vegetables and fruits in nearby villages for ensuring supply of these articles to the hill resort. Arrangements will also be made to ensure steady supply of daily necessaries.

This publication has been quoted at length as it shows the possible trend of the modern Indian multi-purpose hill-station of the future.

Summary

From this account of the history and distribution of Indian hill-stations one can evaluate the relative importance of many of the factors which governed their location. In the first instance height above sea level was of primary consideration for British health sanatoria and military cantonments, on land obtained through political strategy. The high ranges in the Himalayas on which the first stations were built had been retained because of the invigorating stimulation of their climate. At this stage micro-climatic features appear to have been unimportant. The tract of land held by the British was approximately 200 miles wide and 100 miles deep, but at no stage does there seem to have been any systematic survey of the entire area in order to discover the best sites for hill-stations. Instead, the founding of almost every new hill-station can be traced back to an individual officer who, on a shooting or camping expedition, decided to build a shack or permanent house on a site which pleased him and to which he could return the following year. Others followed suit and the resulting settlement eventually formed the nucleus of a hill-station. Military hospitals and barracks were added later or located nearby. Thus the element of chance seemed extremely important. Judging by the tremendous amount of damage caused through the years to property and communication systems by landslides, it would appear that little consideration was given to such factors as bedrock, soil consistency, slope, and vegetation.

Accessibility was always an important factor though a relative one. Any range of hills may have had several high valleys. The one chosen as a hill-station site was likely to be either the nearest suitable one, or the one with the least difficult slopes to be manipulated on horseback. Accessibility was, however, not merely a physical trait. As means of transportation were improved, so the hill-stations became more easily accessible to larger numbers of people.

The few exceptions where high altitude, together with accessibility were not the prime locative causes, were those army cantonments which seem to have been located with regard to guarding the frontier boundaries, such as Chakrata, Bakloh, Dharmkot, and to some extent Dharmasala. Not easily accessible to the plains, they were, however, in strategic positions with regard to the mountain frontiers of Tibet and Nepal.

It was only after the early sites had become crowded and people were prepared to explore into more distant mountain ranges that some of the healthier and more pleasant sites were found and micro-climates were considered. In the Kumaon Himalayas for example, Ranikhet, Chaubattia, and Kausani are sheltered from the full onslaught of the southwest rainbearing winds. They have far less rainfall than Naini Tal, the earlier station, even though their altitude is almost as high, or in the case of Kausani, somewhat higher. Furthermore, all three look across to the Nanda Devi snowcapped ranges which from Naini Tal can only be seen after a steep hike to the summits of local hills. In the stations of peninsular India micro-climates were also of greater importance where there were fewer high altitude ranges.

After the Mutiny, dealings with native princes were slowed considerably for political reasons, thus political constraints on location of hill-stations became more important. Most satellites of the early hill-stations established after 1857, as well as new centers in areas where really high sites were unavailable, were in lower-lying territories, and often were used by lower echelons of the plural society. Accessibility was no longer the prime motive for their location. Where none of the alternative sites were particularly favorable, that which gave the best relief from hot-weather conditions through some local physical layout, would be likely to be chosen, even if it were not the nearest or most easily accessible site.

To some extent it is possible to discuss the distribution of Indian hill-stations also in terms of the numbers and lengths of stay of the Europeans residing in different sectors of the country. The Aravalli Range of the northwest Deccan, for example, is more extensive and has higher hills than do the Chota Nagpur Hills of the northeast, but they contain only two hill-stations, compared with four in Chota Nagpur, while the Vindhya Range of the northwest, which has been considered an important high ridge by historians as it created a barrier in the past that prevented free movements between Dravidian and Aryan peoples, has no hill-station at all. The reason for such a lack of hill-stations in the northwest is to be found in the absence of British residence rather than in a deficiency of hills. This represents a form of political constraint.

The abundance of hill-stations in Kashmir, on the other hand, where the British also owned no territories, is explained, as noted earlier, in that the Kashmir centers were not true hill-stations during the colonial period, being used only by a small number of British. However, they have been highly developed since Independence, when the tourist function became the most important factor regarding the distribution of new multi- and single-purpose hill-stations and resorts.

CHAPTER IV

THE ORIGINS AND EVOLUTION OF KODAIKANAL

The detailed investigation of the site and situation of a single hill-station should permit the evaluation of the relative importance of the respective factors requiring consideration in the choice of its location (see Chapter III). These include not only physical traits--elevation above sea level, climatic conditions, terrain, vegetation, and accessibility of a hill-station, but also cultural factors pertaining to previous occupance of the district, disease, and other factors which may have created a reputation for a certain locality and thus be important in its ultimate acceptance or rejection. The perceived needs and preferences of the actual founders of the hill-station as well as their ability to fulfill their goals also must be included.

Site and Situation of Kodaikanal

As hill-stations came into being in British territories for the convenience of the British residents there, the first questions concerning the location of hill-stations in the southern section of the Presidency of Madras would be where the British territories were, and where within them the hills were located. Figure 26 shows the approximate boundary of British Madras in 1836, some years after the start of the hill-station era. As an altitude of 5,000 feet was still contained within the malarial fever range (see Chapter II), the territories quite safe from fever were those of 6,000 feet and higher. The choice of a hill-station site, as ~~observed in Figure~~ 26 was thus limited to four possibilities, the Nilgiris, the Palni Hills, and small sections of the Anaimalais and Cardamom Hills. The most expansive of these areas, the Nilgiris, was the district chosen in the 1820s for the official sanatorium and military summer headquarters by the government in Madras (see Chapter III). For government officials working further south, however, the Palnis, Cardamoms, and Anaimalais were considerably nearer. The Anaimalais have gentle westward-facing slopes which offer few restraints to the onslaughts of the rain-bearing southwest winds. They are thus extremely wet from the end of May until September, a factor which would hardly make them attractive hill-resorts. Furthermore, the British territories lay northwards of the Anaimalais, so hill-station approaches would need to come via Palghat. Here, however, the Anaimalais offer a steep scarp slope making them almost inaccessible

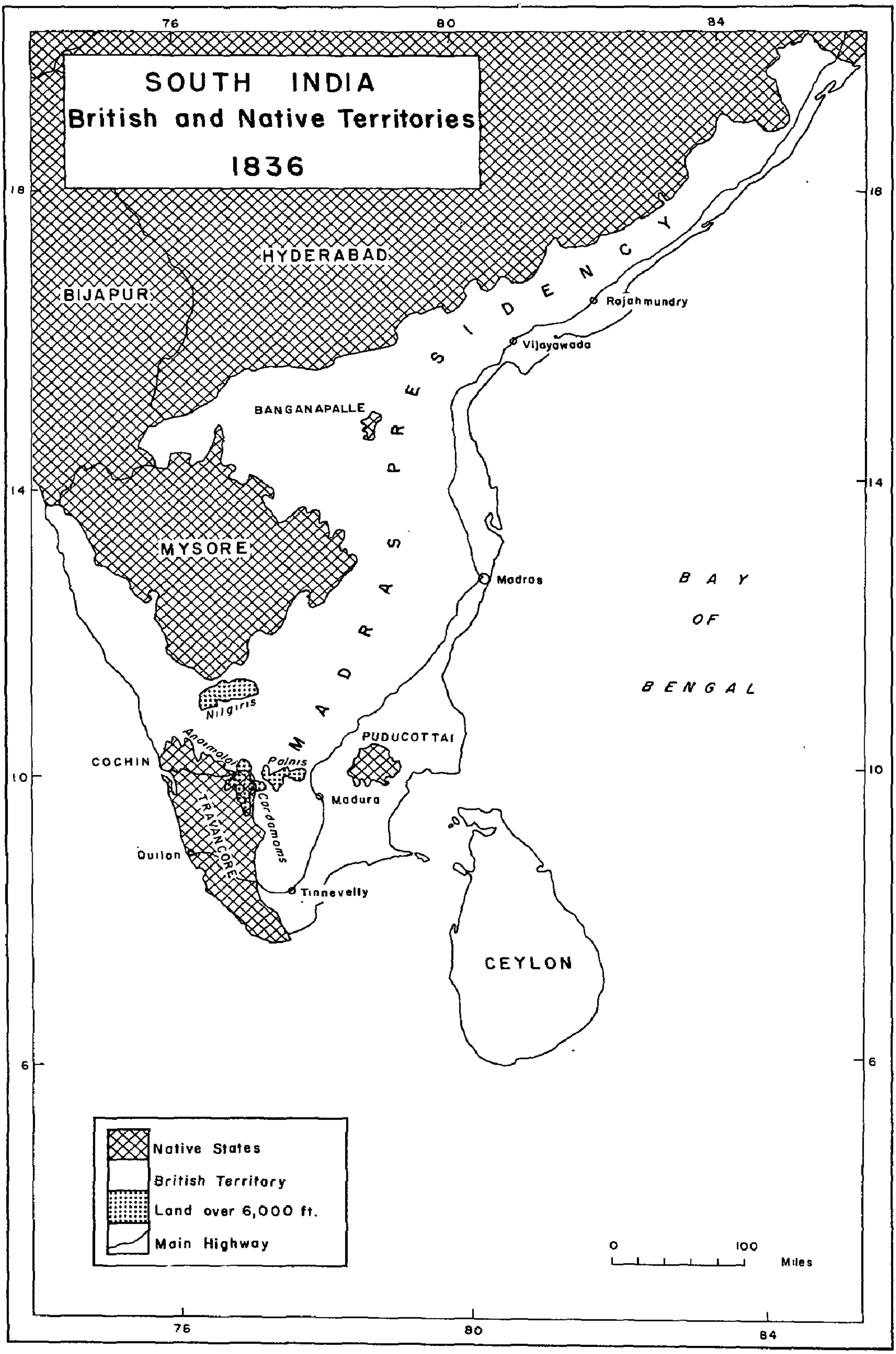

SOUTH INDIA
British and Native Territories
1836
HYDERABAD
BIJAPUR
MADRAS PRESIDENCY
BANGANAPALLE
MYSORE
Nilgiris
Anaimalai
Palnis
Cardamoms
COCHIN
TRAVANCORE
PUDUCOTTAI
Rajahmundry
Vijayawada
Madras
Madura
Quilon
Tinnevelly
CEYLON
BAY OF BENGAL
Native States
British Territory
Land over 6,000 ft.
Main Highway
0
100
Miles
76
80
84
18
14
10
6

Fig. 26

from the north (see Fig. 27). The highland of the Cardamoms is limited. Where land might have been adequate and suitable for the erection of a hill-station, it lay in the native state of Travancore. Furthermore, steep scarp slopes, this time facing eastwards, again made accessibility into these hills extremely difficult from the British Presidency.

Of these three southern converging hill-ranges, the Palnis have several distinct advantages. They are nearest to Madurai, Tinnevelly, and the southern Madras territories. Also, the entire Palni spur of the Western Ghats juts eastwards and is thus protected by the Anaimalais from the main precipitation downpours associated with the Southwest Monsoon. Though they do receive their largest share of rain with the Northeast Monsoon and thus can be damp and unpleasant from late October to early December, this does not affect the hill-season, which is from March to June. Furthermore occasional showers are experienced during the first three months of the year when the winds still blow from the northeast so that the dry season is not usually completely waterless, as it is in the Nilgiris where no rain is expected at all between January and March. The grass of the Palni Hills is thus not as likely to wither, and the water shortage is rarely as acute. The Palnis generally have lower precipitation than the Nilgiris or the western-facing Anaimalais and Cardamoms, and what falls is more evenly spread throughout the year. Accessibility, however, remains a problem, as once again, steep scarp slopes face both north and southeast ~~(see Fig. 27)~~, greatly restricting the possibilities of building roads for vehicular traffic.

The Palni Hills were first surveyed by British administrators in 1821, but the surveyor's report apparently was not published until 1837, a decade after Ootacamund in the Nilgiris had become the official sanatorium for the Madras Presidency. Before this time, however, botanists and hunters had camped on the hills, and several cattle trails and trading paths leading up to the hill-villages had been discovered. The hills lie between 10°5'-10°25' north and 77°15'-77°50' east. They are approximately forty miles across from west to east, and average fifteen miles north to south, thus occupying some 600 square miles.

Like the Anaimalais and Cardamoms, the Palnis consist of archaic plutonic rocks. In the Palnis the rocks are almost entirely Charnockites, a bluish granite, though broad bands of feldspars and quartz cross the gneissic foliations. They are hard, durable rocks which on their scarp slopes form steep, sheer precipices which, despite the work of forceful tropical erosion agents, make road-construction along the scarp slopes an impossibility (see Fig. 32).

There are two distinct levels of plateaux, a higher westerly half with elevations from 6,000 to 8,000 feet and high points, Vembadi Peak 8,221 feet and Vandaravu Peak 8,310 feet above sea level; and a lower easterly plateau averaging 3,000 to 5,000 feet in height. These are known as the Upper and Lower Palnis.[1] The Lower Palnis consist of a

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[1] For the location of these general physical features see Figure 28.

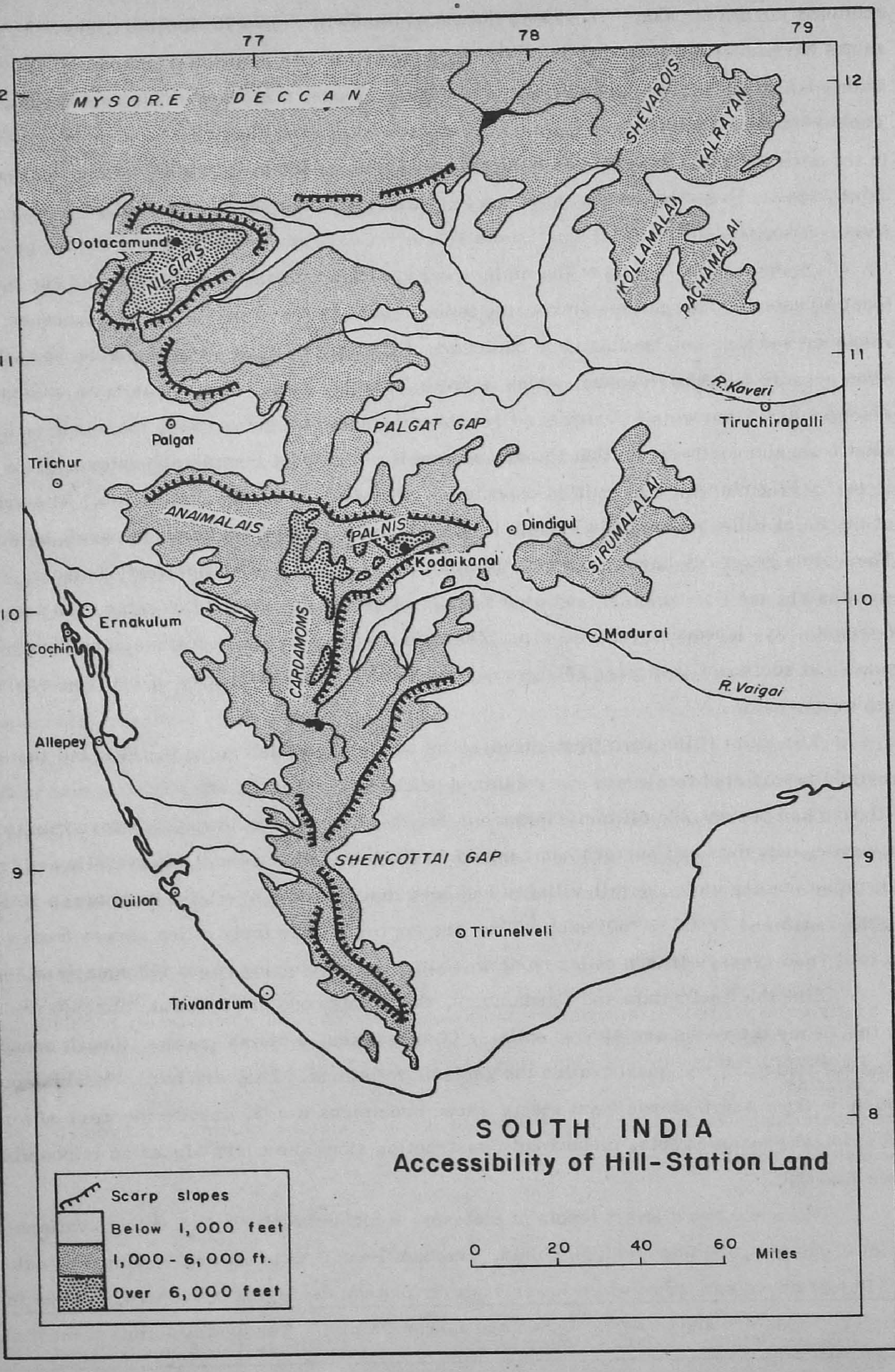
SOUTH INDIA
Accessibility of Hill-Station Land
MYSORE DECCAN
SHEVAROIS
KALRAYAN
KOLLAMALAI
PACHAMALAI
Ootacamund
NILGIRIS
R. Kaveri
Tiruchirapalli
Palgat
PALGAT GAP
Trichur
ANAIMALAIS
PALNIS
Kodaikanal
Dindigul
SIRUMALALAI
Ernakulum
Cochin
CARDAMOMS
Madurai
R. Vaigai
Allepey
SHENCOTTAI GAP
Quilon
Tirunelveli
Trivandrum
77
78
79
12
11
10
9
8
Scarp slopes
Below 1,000 feet
1,000 - 6,000 ft.
Over 6,000 feet
0
20
40
60
Miles

Fig. 27

confused jumble of peaks, separated from each other by densely wooded valleys. As late as the early decades of the twentieth century they were considered fever areas. The Upper Palnis being higher, are considerably cooler and consist largely of rolling grassy downs. The forests are restricted to isolated woods in sheltered valleys, known as sholas. Except in these valleys, the soil is usually a thin upper horizon of black peaty earth of varying depth, rarely more than a foot deep, beneath which is a yellowish clay. Underlying rocks frequently outcrop.

Temperatures in the Upper Palnis, as is to be expected at high altitudes within the tropics, are cool and fairly uniform throughout the year. Monthly mean temperatures range narrowly from a low of 55°F. to a high of 63°F. The diurnal temperature ranges are often greater than the range of seasonal means. January and February nights are cold, reaching to the low 40°s F. with frost frequently forming in the valleys. As the days are mostly sunny and clear, noon temperatures can be as much as 35°F. higher than those at night. March and April are milder both during the day and at night, but there are frequent afternoon showers particularly towards the close of April. In May, India's warmest month, the winds swing to the southwest, and the heat in the hills is often relieved by torrential rains and hailstorms in the afternoons. June and July are often rainy, while August and September can be fine, warm, and pleasant if the Southwest Monsoon was early and short. There can be, however, frequent fogs, mists, and drizzle if the monsoon was delayed. In late October the winds revert to the northeast bringing damp, chilly weather. Three quarters of the annual rain falls in this season. By early December the rains are over and the weather is expected to remain clear and bright.

The equable temperatures in the Nilgiris were discussed in Chapter III. Having spent an unusually wet year in Kodaikanal in 1861-2, in order to make a survey for the possibilities of setting up a military health sanatorium in the Palnis, Colonel Hamilton nevertheless reported:

> The climate of the Upper Palnis is considered to be exceedingly salubrius: and no sickness of any kind is known to be endemic or epidemic upon them. They are too lofty to be visited by the ordinary malarious fever of India; too sparsely populated to be scourged by typhus and typhoids. And having a much drier air and more equable temperature than the Nilagiris, they are said to be far better suited to children and invalids.[1]

The sanatorium was never built, not because of any climatic problems, however, but because of difficulties of access.

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[1] J. H. Nelson, Madura Country Manual, Part V (Madras: Government Press, 1869), p. 92.

Early Settlement of the Palni Hills

Both the Upper and Lower Palnis contained villages long before the area was chosen for a hill-station site, and there are evidences of older occupations and a very early folklore. These will be briefly considered as cultural factors which could, perhaps, have played a part in a decision regarding the choice of hill-station location.

The oldest references to these hills are those which may be inferred through toponymical studies. There are two explanations for the name Palni Hills. According to the first Survey Report made by Lieutenant Ward in 1821, the origin of the name Palni is said to be the following:

> Once upon a time Siva called up before him his sons Subramaniya and Vig'hneshwara and promised to bestow a beautiful fruit (Palam) on him who should first complete the circuit of the universe. Upon this Subramanya quickly set out upon his peacock *Vahanam*, or vehicle, whilst the other, knowing that Siva was himself the universe, simply walked around Siva's form and thereby attained the prize. After a while Subramanya returned from his journey around the world, and was much chagrined at finding himself the loser, and went and hid himself. When his father found him he succeeded at last in putting him in good spirits by saying complimentarily, 'பழந்நீ' (Palan-ni) i.e. 'Thou art the fruit', meaning that he was the choicest fruit or product of the world: and in commemoration of this saying, the place where it was said was called Palani.

After 1868 no subsequent gazetteer refers to this story. The more generally accepted explanation is that the name Palni Hills is a translation of the Sanskrit Varahagiri, or Boar Mountains, and the reason for the name is given in the ancient Mad'hura St'hala Purana. This Purana is composed of 64 legends, the 45th of which tells that the *rishis*, local sages, transformed twelve naughty children who had mocked them into pigs. Siva, however, rescued the children and eventually promoted them to high office in the Pandyan government. Representations of this story appear among the sculptures of the Puthu Mandabam, or Tirumala Nayak's Choultry, as it is often called, a building now used to house the museum collection at the Madurai Temple.[2] Such a legend would hardly encourage the building of a hill-station in the Palni Hills, especially as wild boar still do occasional damage to crops. They might be preferable, nonetheless, to the neighboring Anaimalais, or Elephant Mountains, still inhabited by wild elephants.

The origins of the name Kodaikanal are not known. The early missionaries called their center Palni Hills, as did the early Civil Service doctors. After 1860 the name was written as Kodikanal in British government correspondence (or Kudaikanal, and later Kodaikanal), but there is no indication of the exact Tamil pronunciation. *Kanal* (Tamil: கானல்) is the Tamil word meaning a dense forest, but *kodi* or *kodai* could be pronounced

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[1] *Ibid.*, Part V, p. 88.

[2] *Ibid.*, Part III, p. 3, and also pointed out in W. Francis, *Gazetteer of the Madura District, Madura*, I (Madras: Government Press, 1906), 3.

four different ways and mean four different things, all of which could appropriately explain the name. *Kodi* (கோடி long Tamil "o") means "The end"; *kodi* (கொடி short "o") is a creeper; *kodai* (கோடை long "o") is "summer"; *kodai* (கொடை short "o") means "gift."[1]

Though there are reliable ancient sources of Greek and Roman times which refer to the hills of South India and which document a tribal distribution similar to that of today,[2] the earliest specific references to Kodaikanal and the Palni Hills are to be found in the Tamil Sangam literature of the early Christian era. At this time a comparatively advanced civilization centered at the Pandyan capital, the city of Madurai. This literature consists mainly of eight anthologies, the *Ettutokai*, and a further group of Ten Idylls, the *Pattupāttu*, which together contain more than 2,000 poems of varying lengths.[3] They abound with descriptions of the hills, forests, and hill-tribes. Thani Nayagam claimed:

> These poems present faithful portraits of the social, economic, political, and literary state of the Tamil country the two centuries before and after Christ . . . The *Ten Idylls* contain lengthy and picturesque descriptions of the Tamil country and its seasons. These poems . . . are in the nature of guide-books and travelogues . . . The first poem on the god Murukan (still the chief god of the Paliyan hill-tribes today), contains descriptions of the natural beauty spots most beloved by him.[4]

Several of the *Ten Idylls* especially the *Malai Pāttukadām*, *Kurunchipattu*, and *Purumbanānūrupadai* contain elaborate accounts of the mountains, their flora, fauna, and inhabitants as seen in the following reference to the Paliyans of the Kodai Hills:

> "O warrior chief of the Kodai hill with white flowering jasmine hedges! O hunter with powerful bow and ferocious fleet-footed hunting dogs with which you destroy entire herds of deer . . . May you live free from disease!"[5]

One of the poets used the word *kodai-kanal* (கோடை, long "o") to describe: "forests that are green even in summer."[6] The official gazetters however, from Nelson in 1868 to

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[1] The four possibilities have been discussed by Mr. P. Jothimuttu, former principal of the Language School held in Kodaikanal, and quoted by Charlotte C. Wyckoff, *Kodaikanal 1845-1945* (Nagercoil: London Mission Press, 1945), pp. 6 and 8.

[2] See for example, references to Mount Maleus (the Tamil word for mountain being *malai*) where the shadows fall both north and south with the seasons, in: J. W. McCrindle, *Ancient India as Described by Megasthenes and Arrian* (Being a Translation of the Fragments of the Indika of Megasthenes, collected by Dr. Schwanbeck, and of the first part of the Indika of Arrian) (Bombay: Thacker & Co., 1877), pp. 139 and 156.

[3] K. A. A. Nilakanta Sastri, *A History of South India* (Madras: Oxford University Press, 1955; 3rd ed., 1966), p. 115.

[4] X. S. Thani Nayagam, *Landscape and Poetry* (Bombay: Asia Publishing House, 1966), p. 4.

[5] N. R. Mudaliyar, *The Golden Anthology of Ancient Tamil Literature*, III (Tirunelveli: The South Indian Saiva Siddhanta Works Pb. Co., 1959-60), 81. Note that the name Kodaikanal is still popularly shortened to Kodai.

[6] Wyckoff, *op. cit.*, p. 2.

Baliga in 1961, have persistently claimed:

> The houses are built mostly round the sides of an irregular basin roughly a mile and a half long and a mile wide situated on the very edge of the precipitous southern side of the Palnis . . . On the inner slope of the southern rim of the basin is a beautiful hanging wood which is called Kodaikanal, or forest of creepers, which gives its name to the place.[1]

The first people to live in this area, who have left visible artifacts, were the dolmen-builders. Groups of dolmen circles surround Kodaikanal, which are so constructed that a torch-flare lit in any one circle could be seen by its neighbors on either side and the entire dolmen people were thus able to communicate with each other. By 1954, Father L. Anglade of Sacred Heart College, Shembaganur, had visited and described over a hundred dolmens in the vicinity.[2] Three types of megalithic structures have been discovered, dolmens, kistvaens (or cists), and stone circles. The dolmens are rectangular chambers created by two or more upright stone slabs, topped by a cap-stone. Some of these chambers are as large as eleven feet long, seven feet wide, and five feet high. A small group of them are set inside a stone wall which is usually rectangular. They were probably homes, perhaps permanent, or perhaps a refuge for women and children in times of danger. The cists are closed buried dolmens, generally of smaller size, which seem to be tombs. Near many of them funeral urns were found which are two to three feet in height and five to seven feet in circumference. The stone circles, mostly eliptical in shape, up to 17 feet long and 12 feet wide, seem also to be burial grounds, as digging a few feet below the surface often revealed one or more tombs and great numbers of urns which contained many kinds of pots, copper, brass, and iron implements and ornaments, as well as human bones.

The builders of the dolmens are unknown. Local tribes call them Pandyan forts, or hero houses, using the word for hero which implies the monkey warriors who assisted Rama in crossing to Ceylon to rescue his wife Sita in the Ramayana Epic.[3] Thurston reported a theory that the present widespread agricultural Kurumba tribes are the descendants of the dolmen builders, as several groups of Kurumbas still build dolmens as resting places for their dead, and others build dolmen-like temples. Thurston favored the theory that the Kurumbas "and other allied tribes of short stature with broad noses" were "the

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[1] B. S. Baliga, Madras District Gazetteers: Madurai (Madras: Government of Madras Press, 1960), p. 387.

[2] L. Anglade, Dolmens and Tombs of the Pulney Hills (Bombay: The Anthropological Society, 1954).

[3] Victor Rosner, "Dolmens in the Anamalai Hills, South India," Anthropos: International Review of Ethnology and Linguistics, LIV (1959), 181.

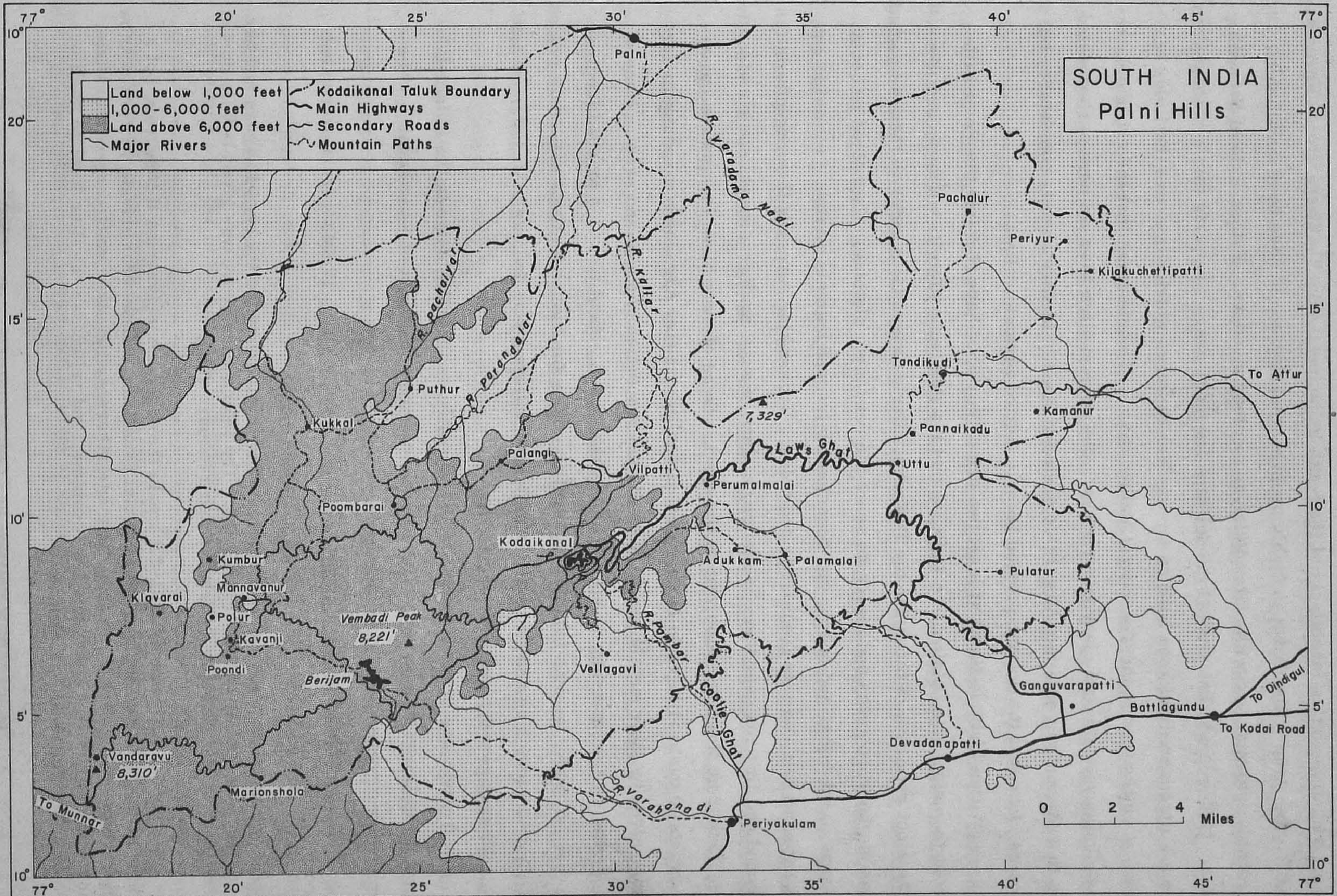
SOUTH INDIA
Palni Hills
Land below 1,000 feet
1,000-6,000 feet
Land above 6,000 feet
Major Rivers
Kodaikanal Taluk Boundary
Main Highways
Secondary Roads
Mountain Paths
77°
20'
25'
30'
35'
40'
45'
10°
15'
10'
5'
Palni
R. Varadama Nadi
R. Kallar
R. Pachaiyar
R. Porandalar
Pachalur
Periyur
Kilakuchettipatti
Tandikudi
To Attur
Kamanur
Pannaikadu
7,329'
Puthur
Kukkal
Palangi
Vilpatti
Laws Ghat
Uttu
Perumalmalai
Poombarai
Kodaikanal
Adukkam
Palamalai
Pulatur
Kumbur
Mannavanur
Klavarai
Polur
Kavanji
Poondi
Vembadi Peak
8,221'
Berijam
Vellagavi
R. Pambar
Coolie Ghat
Ganguvarapatti
Battlagundu
To Dindigul
To Kodai Road
Devadanapatti
Vandaravu
8,310'
Marionshola
To Munnar
R. Varahanadi
Periyakulam
0
2
4
Miles

Fig. 28

most archaic existing inhabitants of the South Indian peninsula."[1] There are no Kurumbas left on the Palni Hills, but it is highly probable that they would have been defeated by, and probably intermarried with, later Pulaiyan or other invaders. Father Pujo of Sacred Heart College, who has studied the dolmens for many years, supports this hypothesis, as he has discovered dolmens built on top of older terraces which were once the fields of ancient cultivators in the Tevenkarai Valley area.[2] It would seem that the art of dolmen-building passed through many generations. The dolmen sites have not been carbon-dated so that attempts to date this Megalithic period of Kodai's history remain conjecture, but it seems clear that the dolmen peoples became settled agriculturalists.

Within historic times at least two primitive tribes have fled into the Palni Hills from the neighboring plains, the Paliyans and the Pulaiyans (Tamil: பளியன் and புலையன்).[3] The most primitive of these are the Paliyans. Early descriptions refer to them as nomadic tribes who wore grass and leaves as scant and very dirty clothing. They lived on roots, leaves, wild dates, and honey, and occasionally trapped animals or fish, or smoked out flying squirrels and rats from trees and holes. For cooking purposes they dug pits in the ground and lit fires over them by striking a piece of steel against a quartz stone and igniting floss from the silk-cotton tree in the spark. Some of them hired themselves out as servants to caste villages in more recent times, where they have made a reputation for themselves by their knowledge of the medicinal properties of herbs and roots. Many of them now live permanently in villages.[4] Kukkal Caves, about 25 miles by road from Kodaikanal and a favorite camping and hunting center for the modern trekker, show traces of Paliyan occupation and there are still Paliyan villages near Palamalai and Maniampatti which though nearer, are less accessible.

A study was made in 1963-4 of Paliyan villages including some in the Palamalai area of the Lower Palnis, approximately twelve miles southeast of Kodaikanal.[5] The

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[1] Edgar Thurston, Castes and Tribes of Southern India, IV (Madras: Government Press, 1909), 139, 153, and 169-70.

[2] Father Jean Pujo has been interested in the dolmens for the past 45 years and has made serious studies of them since 1935. The information above was given by him during interviews at Shembaganur in January and February 1969.

[3] Although Thurston (V, 461-72) treats these groups together as if they were but a single group, both earlier and later official gazetteers and several private writers acknowledge two distinct groups, one nomadic food-gatherers, the other settled agriculturalists, each with distinctive characteristics, customs, and religions. Earlier English spellings are often Palliyan and Poleiyan.

[4] Recorded from various sources in Francis, op. cit., pp. 105-6.

[5] Peter M. Gardner, "Ecology and Social Structure in Refugee Populations: The Paliyans of South India" (Unpublished Ph.D. thesis, Pennsylvania State University, 1965).

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Paliyans are segmentary tribes.[1] They have a headman with virtually no authority beyond a pleasing temperament, who tries to keep the peace at family frictions by his words of gentle wisdom or reprimanding jokes. The major goals of the tribal units seem to be to keep peace within and avoid aggression from without. In order to retain their way of life they have removed to the dry lower slopes on the lee-shadow side of the Western Ghats, out of reach of the shifting-cultivators of the Mannan warrior tribes of the Upper Cardamoms, or the Kunnavan-Vellalan agricultural castes of the Upper Palnis. At the same time the steep slopes and thorny, xerophytic vegetation of their territories do not tempt up the Tamil cultivators from the plains below. Because of the unfruitful nature of their environment, they have little choice but to live in small mobile groups. Except for clothing and bill-hooks, their all-purpose hunting and collecting tools, they are self-sufficient. These few necessities they obtain by bartering honey or medicinal herbs, or by performing contract coolie labor for short periods of time. The Paliyans speak a Tamil dialect which presumes early contact with neighbors in Tamilnad. Though extremely primitive, they do not eat beef and thus carry no pollution. They frequently act as guides for pilgrimages to forest shrines in the hills. In this temporary role, analogous to a spiritual guide, pilgrims accept water from them and give them food, the sacrificial cooking pot, and cast-off clothing. Otherwise their status among caste villagers is extremely low.

The Pulaiyans as settled agriculturalists had reached a later stage of development. Nevertheless, it is thought that they are earlier inhabitants of the Palni Hills. At the time of the Survey account of 1821, it was suggested that the Pulaiyans were the aborigines of the Palni Hills. They seem to have been the builders of the hill terraces and were perhaps more widely distributed over the hills at one time. They may have had some connection with the agricultural dolmen builders. By the fourteenth century, however, they seem to have become an indolent, lethargic people, and they were overrun by a conquering Kunnavan caste who invaded their villages and turned them into slaves, keeping them in severe subjection. As they eat beef, they are considered a highly polluting group. Early missionaries who worked among them tell of the simplicity of some of their customs, which among higher castes are rather complex. Both marriage and divorce, for instance, are simple ceremonies. At the time of marriage a bride-price is paid and a tali, or necklace, of white beads is tied around the bride's neck. Divorce can be obtained by either party on payment of a fine equal to the bride-price. Although the first marriage is arranged by the parents, divorcees and widows may remarry whom they choose. There are Pulaiyans in the Palni Hills today, chiefly attached to caste villages as outcastes and coolies, though, like the Paliyans, they are consulted on matters of medicinal herbs, tiger poisons, and methods of driving out evil spirits.[1]

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[1] See Sahlin's classificatory description, "Segmentary Tribes and Chiefdoms," in Marshall D. Sahlins, Tribesmen, Foundations of Modern Anthropology Series (Englewood Cliffs, N.J.: Prentice Hall, 1968), pp. 20-27.

Later people to migrate into the Palni Hills were the Kunnavans, who claim to be Vellalan farming castes from the Coimbatore Plateau. They invaded the hills in the fourteenth and fifteenth centuries, probably to escape the ravishes of war or famine. They settled chiefly in the Lower Palnis, dispossessing the Pulaiyans and energetically farming their lands. In the early twentieth century they were described as the principal cultivating caste on the Palni Hills. According to their own traditions their name comes from Kunnar, a town in their original homeland. They are industrious farmers and some traditions claim that they were sent up to the hills by Poligar feudal chieftains to replace the more indolent Pulaiyans. In the seventeenth and eighteenth centuries further Kunnavan immigrations took place during the rule of Vijayanagar, the Marathas, and the Mysore Muslims by people who wished to escape heavy taxes. In the early nineteenth century cholera epidemics drove more plains' peoples into the hills and villages were established also in the Upper Palnis. One of these is Vellagavi, from where today men and women daily carry baskets of fruit and vegetables on their heads up the almost vertical eight miles of cliffside to help feed Kodaikanal's growing population (see Fig. 40). They are easily recognizable because of the distinctive way the women tie their saris.[2] Supplies from these local villages were used from quite early days of the hill-station. However, as seasonal visitors from the start drove up their own cows for milk supply, grew vegetables in their own gardens, and set out groves of fruit trees, it is doubtful that the existence of local villages nearby was even considered at the time of Kodai's creation. Early cultural aspects do thus not play an important role in the locational aspects of the hill-station at Kodaikanal.

Location of a Hill-Station in the Palni Hills

The reason for choosing the Palni Hills for the hill-station rather than neighboring hills, and for the exact location of the site within the Palni Hills, seems to be closely linked with previous experiences of Kodai's founders and thus is related to the early history of the American Madura Mission. This mission was founded in Madurai in 1834. Within ten years, six of the early missionaries had died and then in 1844, what has been referred to as: "a fearful attack of cholera"[3] broke out among them. The mission had originally started its work in the Jaffna Peninsula in northern Ceylon and when so many of the personnel in India became sick, the board members showed their concern by contemplating the purchase of a vessel to carry the invalids to Jaffna. Ocean voyages were considered healthy for convalescents, and the members in Jaffna had not undergone a serious epidemic of sickness. However, this was also the time of the British hill-station building era, and rather than buy a ship, permission was received in 1844 for the erection of a hill-settlement.

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[1] Several accounts are quoted in Francis, and Thurston, op. cit.

[2] These are knotted in front across the breast and then bound around their waists.

[3] John S. Chandler, Seventy-five Years in the Madura Mission (Madurai: American Madura Mission, 1909), p. 82.

As early as 1840 one of their members had gone to the Nilgiris to recuperate, but the journey to Ootacamund was too difficult and expensive to be taken on a regular basis. The nearest hills to Madurai are the Sirumalais. Approximately twenty miles from the city and without steep scarp slopes, they were easily accessible. With several peaks over 4,000 feet, they were considerably more comfortable than the plains below and the American missionaries seemed unaware of the dangers of malaria at this level. They built their first bungalow in 1844 and made plans for others to follow. Soon after the cholera attack the first group of survivors visited the new settlement. Their report was a sad one:

> In February 1844 Mr. and Mrs. Muzzy went up there, and at first he was invigorated and partially restored from the effects of the cholera; but the fever set in with peculiar violence and laid low first their servants and then themselves. Tracy and his family followed in March and were greatly benefited. But in April, when Lawrence went up there with his family and began the building of a new bungalow, his second daughter died after an illness of but three days. North and his motherless children were also attacked and all returned to the plains, only to continue in suffering there. Evidently the Sirumalais were not the life-saving institution they were supposed to be.[1]

The Sirumalais were apparently not high enough to be a protection from disease. The change of environment into cooler weather seemed at first to help the convalescents recuperate from cholera, but in all probabilities they were quickly infected also with malaria which not only renewed the cholera symptoms but lowered their resistance considerably through the addition of malarial fevers. It was deemed necessary to find another mountain home.

At this stage the Americans appealed for assistance to the British. The next nearest hills were the Palnis and they were of considerably higher altitudes, a feature now recognized to be of the greatest importance. The Palni Hills had been surveyed by the British but largely neglected since that original survey more than twenty years earlier. They had not even been revisited, apparently, until thirteen years after the survey. It is very likely that malaria, dense forests on the lower slopes, and wild animals deterred explorers who had ventured as far as its foothills. Ward, the original surveyor, had climbed up from the Kunnavan village of Vellagavi which he used as his headquarters in 1821. In 1834 the Madurai Collector climbed up from Devadanapatti and built a small bungalow at the head of the Adukkam Pass near Shembaganur, about six miles from Kodaikanal.[1] By this time the Palni Hills were also known to botanists through the work of Dr. Wight who visited Kodai-Kanal in 1836 and recorded his observations in the Madras Journal of Literature and Science the following year.[2]

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[1] Ibid., p. 87.

By 1844 another Englishman, a Mr. Fane, had built godowns (storage accommodation) in Kodaikanal and had familiarized himself with the area from his tent as he camped. Also Judge Elliot, now retired from service in Madurai, was planting coffee on slopes of the Lower Palnis further east. It was to Mr. Fane that the American Madura Mission representatives appealed for guidance after the failure of their experiment in the Sirumalais. They found him extremely helpful, offering them the use of his godowns, help in acquiring materials for their houses, and guidance on the journey up from Devadanapatti. His letter of 5 April, 1845, closes: "I might also be of some assistance to you in choosing a spot for your future house, as I am well acquainted with not only the prettiest but also the coolest part of the hills."[3]

Following his advice the mission representatives chose the Kodaikanal Basin for the site of their settlement. In time for the Madura Mission Quarterly Meeting in June, 1845, the first two bungalows had been built in Kodaikanal. They were "Sunnyside" and "Shelton" near the southern edge of the basin. Fane had given help with building matters, servants, and supplies, as had also ex-judge Elliot. Six American families came up that summer, prepared to put up with whatever inconveniences were necessary so that they might escape the enervating heat and disease danger on the plains below. In the following year British houses also appeared and the hill-station was launched.

The factors which determined the choice of site for the Kodaikanal hill-station were thus closely associated with the personal needs of the founders--nearness to Madurai where both British civil servants and American missionaries worked; high altitude above fever range. As far as the Americans were concerned no other factors were seriously considered. The Palnis gave them a refuge from sickness, which the Sirumalais had failed to do, and they were the nearest hills which could do this. All other difficulties could either be overcome or endured. The British, having surveyed a far larger territory, probably chose the Palni Hills location deliberately in opposition to similarly elevated sections of the Cardamoms or Anaimalais. Thus climatic features played some role in the establishing of the Palnis as a general situation for the hill-station, though it was a happy coincidence that the nearest hills also had the pleasantest weather conditions.

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[1] There appears to be some discrepancy regarding the date for the building of this house. Wykoff, who had considerable original sources in the form of newspaper clippings and personal records and letters, gave the date as 1837 (see Wykoff, op. cit., p. 3). Francis, whose records of house-building are frequently generalized and thus not as accurate, states 1847 (see Francis, op. cit., p. 251). In either case it burned down very shortly after completion.

[2] See: Robert Wight, "Flora of Kodaikanal," Madras Journal of Literature and Science, V (April, 1837), 280-87; and idem, "Memoir Descriptive of the Vurragherry and Kunnendeval Hill," Madras Journal of Literature and Science, VI (October, 1837). This article also contains Ward's original Survey Report of 1821. The Imperial Gazetteer of India Provincial Series, Madras II (Calcutta: Superintendent of Government Printing, 1908), p. 214, inadvertently mentions 1,500 specimens of plants having been collected instead of 500. Subsequent gazetteers correct this figure.

[3] Quoted in Chandler, Madura Mission, p. 88.

With regard to actual site, the hills had numerous possibilities. Though high ridges could have been used, as demonstrated at Blackburne Shola,[1] they tended to cause accelerated erosion problems because of their steeper slopes, especially with the construction of larger settlements. There is no lack of high-altitude, relatively shallow inter-ridge basins and valleys in the Palnis, though many of them contain marshes and bogs. The Kodaikanal Basin is perhaps one of the largest, but alternatively there would have been a number of appropriate, better-drained river valleys, those facing north being larger and more suitable for settlement purposes than the southern ones. The British officials from Coimbatore, Trichinopoly, and other important centers north of the Palni Hills, however, found it just as convenient to go to the Nilgiris where hill-stations had already been established. Thus the Palnis were not carefully explored from the northern side with a view to hill-station sites. The people concerned with founding a more convenient new center were those from Madurai and the south. So it was appropriate that the settlement should be established on the nearest suitable large basin beyond the southern rim of the Palnis. It was difficult enough to trek up the scarp slope into the hills, without going further than necessary.

Some dissatisfaction, however, was expressed with regard to the choice of site for the hill-station. In speaking of the Berijam area in 1864, Hamilton felt that it had a superior location to Kodaikanal. He wrote:

> The vicinity of this lake is in my opinion by far the best site on these hills, either for a Military Cantonment or sanitarium. The elevation of the plateau above the sea is about the same as Kudaikanal . . . the ground near the northern end of the lake, being more in mountain than Kudaikanal, is less subject to mists from the low country which so constantly envelope the latter settlement.[2]

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[1] Collector Blackburne's house had been built on a ridge which was part of the main southern rim of the Kodaikanal Basin, near Adukkam, at about 6,000 feet in altitude. The area was named Blackburne Shola in his honor.

For location of this and other features in the Palni Hills see Figure 28.

[2] Quoted in: John Shortt, The Hill Ranges of Southern India (Madras: Higginbottom & Co., 1868-1876), Part V, p. 73.

He realized, however, that a road up, following what he considered was the best route from Bodinayakkanur considerably west of Periyakulam, would be equally difficult to cut as one to Kodaikanal owing to the precipitous character of the southern scarps of the mountains. He also considered the north-facing Puthur Plateau basin between Kukkal and Poombarai, but suggested that as it was generally a thousand feet lower than the Kodai and Berijam sites, careful surveys would first be necessary with respect to the possibilities of malaria.

Severe criticism of the site was given in the Madura Country Manual:

> The Settlement of Kodikanal consists of a dozen or more small and ugly houses built by Europeans and Americans, principally by the latter; and a few huts which accommodate servants and others. There is no native village in its neighbourhood. The situation is not well chosen in respect of beauty of scenery: and no stream flows near Kodikanal. Moreover the lake has not quite lost its ancient character of a swamp, and the soil is so loose and friable as to make walking rather unpleasant. On the whole, the Settlement has too many disadvantages. If the Palanis are ever to become popular, a pleasanter spot than Kodikanal, and there are hundreds available, must be chosen as the site of the new Settlement.[1]

Time has proved this forecast inaccurate, and in general evaluation of the site and situation of Kodaikanal were favorable. The Madurai missionaries were certainly well-pleased with their choice. Extracts from letters dated in 1847 and 1858 read:

> The Sanitarium we have chosen promises every facility for the restoration of health which is to be found on the Neilgherries or on the Ceylon hills, and at much less expense even counting our houses at twice their cost. We are now surprised at ourselves for not knowing years ago that within our own district we had a resort which affords us nearly every facility which can be found by going further and spending more.
>
> Our stay of two months on the hills was exceedingly pleasant. Especially did we enjoy the wonderful scenery on the ascent; grandeur beyond anything we had ever witnessed before.[2]

Most often the advantages of Kodaikanal in the Upper Palnis were favorably compared to Ootacamund in the Nilgiris. Colonel Hamilton's report in 1864 has already been noted (see p. 95). The 1906 Gazetteer of the Madura District explained:

> In point of climate, Kodaikanal is considered by many of its admirers to rival Ootacamund . . . The mean humidity and the mean daily range of temperature are smaller at Kodaikanal than in its rival, and the cold in the wet months is less bleak and searching. The soil also is so gravelly that roads and tennis courts quickly dry again after a shower. The place moreover possesses the advantages that its native bazaar (and its cemetery) are not situated within the basin of the lake and in sight of the residents, and that it commands a view over the plains which is comforting to those who agree with Lucretius that it is sweet to watch, from a safe spot, one's neighbours in distress.[3]

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[1] Nelson, op. cit., Part III, Chapter IV, p. 98.

[2] Chandler, Madura Mission, pp. 89-90. The first is an extract from a letter written by Mr. Cherry, the second from Mr. Capron.

[3] Francis, op. cit., p. 247.

In 1907 Sandwith claimed of Kodaikanal:

> The advantages of this splendid health resort, which is the best in Southern India, are that the soil surface drains off quickly; there is a great extent of very fine country, a large lake with boating club, schools for European children, and plenty of good food.[1]

Though Kodaikanal had friable soils which dried quickly and were able to produce large quantities of excellent European-type fruit and vegetables, and support beautiful stands of Australian Eucalyptus and Mimosa trees, and a boggy basin-bottom, which could be converted into an attractive lake, it would not be accurate, to claim that such advantages entered into the thinking of the early founders or affected their choice of site. Many of these features could, in fact, be duplicated in other parts of the Upper Palnis.

The 1908 Imperial Gazetteer of India was equally exuberant about the site of Kodaikanal:

> The sanitarium stands about 7,000 feet above sea level. The houses of the European residents are picturesquely grouped about a natural theatre of hills surrounding an artificial lake which has been constructed at the bottom of a beautiful little valley, or on the cliff which overhangs the ghat road leading up from the low country from Periyakulam. The temperature of the station is similar to that of Ootacamund, but somewhat milder; and, as the rainfall is lighter and the atmospheric conditions more equable than those of the Nilgiris, the climate of the place may be said to be one of the best in India.[2]

The advantages of both the general situation and the local site of Kodaikanal for a hill-station thus seemed on the whole to be generally acceptable with regard to position in terms of distance from the South Indian centers of work; to elevation above sea level; to climate at both macro- and micro-level; to size of area and expansion possibilities; and to soils and slope. Historical-cultural factors were largely irrelevant to its choice. Its major disadvantage was difficulty of approach, and this might as easily have also applied to a center located in the Anaimalais or Cardamom Hills (see Fig. 27).

Primary Stage: The Nineteenth Century

The hill-station at Kodaikanal was clearly created to serve the needs of the British and other Europeans in India. Though it developed distinct individual characteristics which in some ways made it different from the British Himalayan hill-stations, it was still a typical foreign exclave of the colonial era. Improvements in the living conditions of its Indian residents were supplementary to its main function, that of a seasonal recreational center for Europeans.

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[1] Sandwith, op. cit., p. 366.

[2] Imperial Gazetteer of India, Provincial Series, Madras II, pp. 243-44.

Social Groups in Kodaikanal

From the time of its origins, Kodaikanal served as a hill-station for both civil servants and missionaries. As the first permanent houses were built by missionaries who outnumbered the government officials, they were justified in feeling that the center belonged to them. Furthermore, as the early missionaries were American rather than British, they were probably less sensitive to the implied innate rights and privileges of the British upper class. Considerable co-operation between these two groups made Kodaikanal a somewhat exceptional hill-station in the weakness of careful distinctions between the hierarchical ranks of its plural society.

The terrain too gave the residents of Kodaikanal more freedom than in most of the northern centers as the basin was large enough for everyone concerned to be able to choose the site which he considered offered the greatest advantages. The highest altitude sites located on the southern rim, which offered spectacular views of the plains below, were at the same time at a disadvantage in that they were further from the center of hill-season activities nearer the middle of the basin. In fact the highest ridges, west and northwest of the basin and about two to three miles from its center, remained uninhabited until the building of the meteorological observatory, which is still considered too far away to be a desirable location. Thus height per se did not play the important role it had in Himalayan centers such as Simla. After Kodai lake had been created it became extremely difficult to decide whether the choicest locations were those which gave views of the plains, or those at the edge of the lake. No one area was ever generally considered to be superior to all others.

A societal hierarchy which differentiated between these two groups of foreign clientele might have become more noticeable had the proposed health sanatorium been built at Berijam. Communications between the two centers would then probably have become highly developed, and the upper strata would noticeably have been that group able to afford to attend activities in both areas. Under such circumstances the missionaries would have been outnumbered as well as outclassed.

Nevertheless, there was definite evidence that a weak dual societal hierarchy had developed among the two groups. The territory fell within the sphere of influence of the British officials in the Madurai District, and maintenance of law and order in it was their responsibility. Thus they would need to be consulted for any innovations which the missionaries might wish to affect, and their decisions became accepted policy by both groups.

There was also evidence of plural societal hierarchies among the Indian clientele. Both British government officials and American missionaries were accompanied by Indian servants, who not only belonged to various castes but were viewed as part of a quite different social hierarchy in the eyes of their employers, according to the amount of salary they received. Merchants and traders increased the complexity of this hierarchy. Furthermore, an Indian elite also visited the hill-station. Before the turn of the twentieth century they had bought property in the hill-station, and were using its facilities together with the British and Americans. Thus from its early years, though not as literally in evidence as in the Himalayan centers, Kodaikanal does indeed contain a form of extremely complex plural society.

Problems of Accessibility

To all its visitors, regardless of their social level, one of the major problems presented by the hill-station at Kodaikanal was difficulty of access. In its early years its visitors were primarily from within the Madurai District, and they arranged their own bullock-cart transportation to the foot of the hills. Climbing through the steep spurs and valleys of the southern scarp slopes presented a major problem. Of the half dozen tracks to the Kodaikanal Basin, the one leading up from Periyakulam via Kistnamma Nayak's tope and Shembaganur (see Fig. 36) became the accepted route and efforts were made to widen and safeguard the zig-zagging path which ascended the 6,000 vertical feet from the Tope to Kodaikanal in a distance of less than twelve miles.

Still within the nineteenth century when the South Indian Railway was extended from Madras to Madurai and Tuticorin in 1875, the hill-station became a chief attraction also to more distant Europeans living near the railroad. Travellers within the Madurai District came by bullock-cart to Periyakulam. Those from further afield left the railway at Ammaiyanayakkanur Station between Madurai and Dindigul, a station which later became known as Kodaikanal Road.[1] Families spent the day at the railway station retiring rooms, waiting for the cool of the evening to set forth on this fatiguing first lap of the road journey. Already by 1880, *transits*, a series of bullock carts, organized somewhat on the lines of Medieval European or pioneering Early American posting systems, had been effectively installed. The gaily painted *transits* were unsprung (see Fig. 29) and several changes of bullocks were necessary for the 33-mile road to the Tope. The carts travelled in convoys and the maistry of the leading transit blew long blasts on his horn before their approach at each village--Nilaikottai, Battlagundu, Devadanapatti, Periyakulam--so that fresh bullocks could be prepared and the change accomplished without undue delay by the light of torch flares. The road was notorious for its Kallan dacoit inhabitants, and at hill-season

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[1] Newton gives an account of this name change which claimed that the traffic manager, accosted by an important American visitor who suggested that the platform be lengthened in order to accommodate its long name, decided instead to shorten the name. See: L. V. Newton, 'Rambling Recollections," in A. Bonnoure, *Sacred Heart College, Shembaganur, Golden Jubilee Souvenir, 1895-1945* (Madurai: Madura Mission, 1946), p. 22.

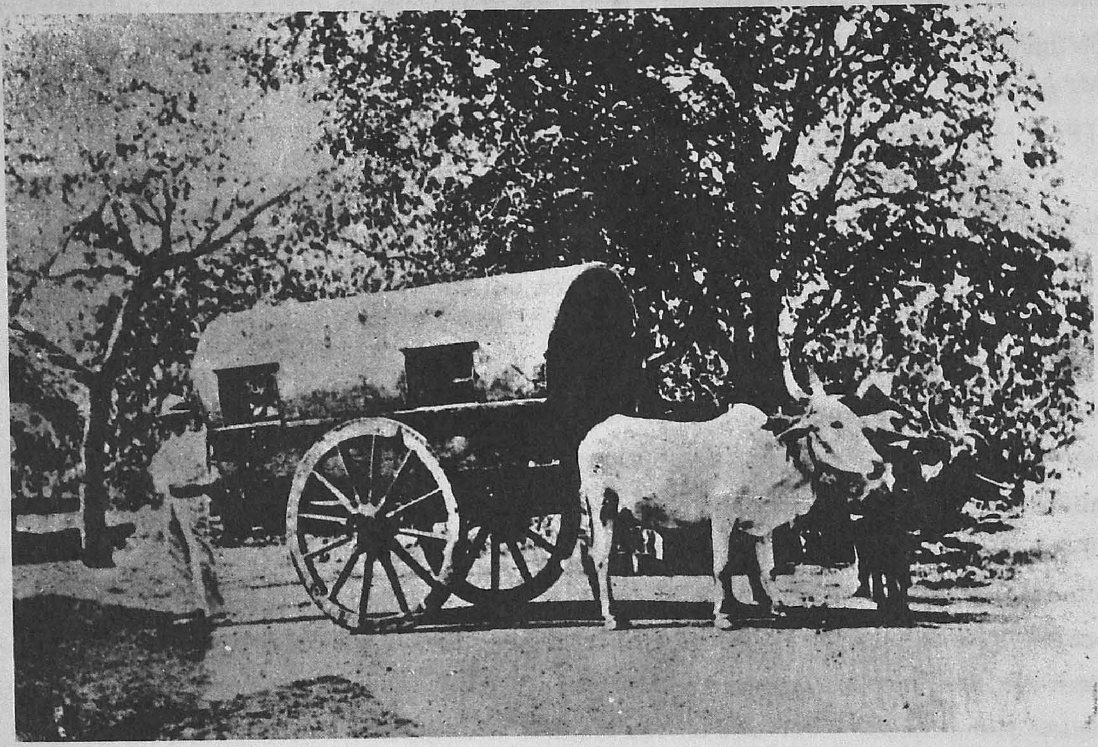

Fig. 29.--A Transit. Unsprung bullock carts; mode of conveyance from the railway station at Kodai Road to the foot of the hills, a distance of 33 miles.

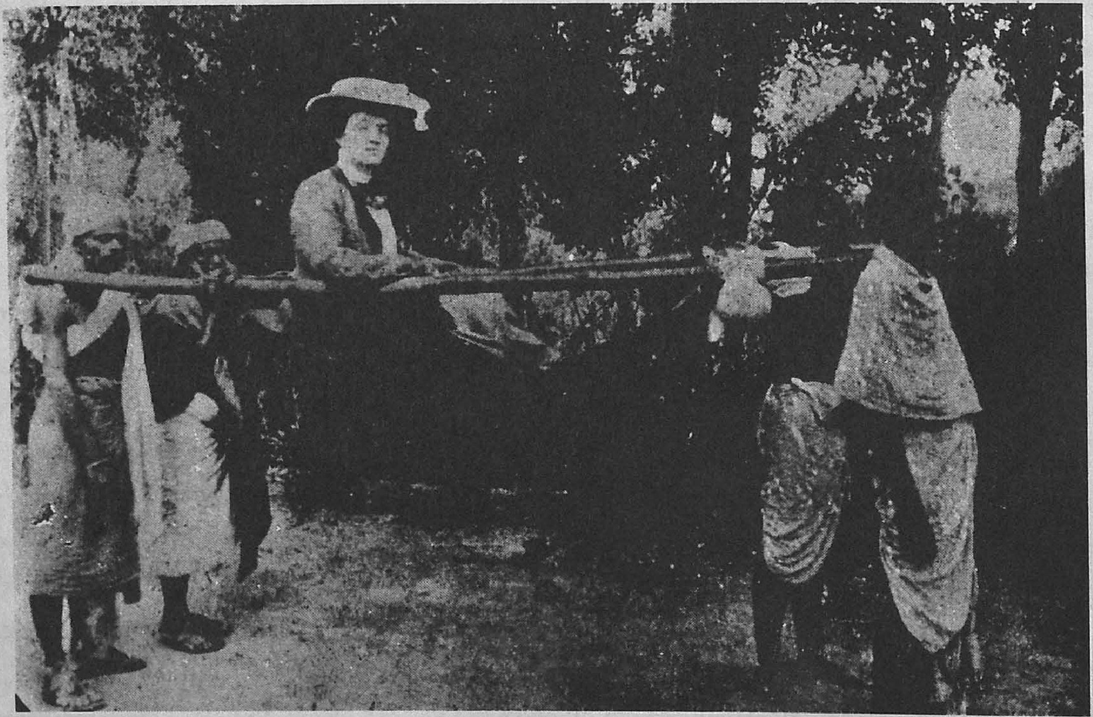

Fig. 30.--The Canvas Chair. Women and children were usually carried up to the hill-station at Kodaikanal by coolies.

months armed guards patrolled its length. Shade trees were planted along its shoulders as the empty transits were obliged to return during the heat of the day. If all went smoothly, the convoy reached its destination at Kistnamma Nayak's tope in the early hours of the morning, though the journey sometimes took as long as fourteen hours.[1]

Here at the Tope, coolies were roused for the second phase of the road journey. Travellers' baggage was re-sorted and allocated to bearers in 50-lb. headloads. Small trunks were strapped on pack-ponies and heavier ones slung from a bamboo pole, which was carried by two coolies. Many of the menfolk had sent their own horses in advance, or they hired tats, the small mountain pack-ponies on which they rode up the coolie ghat. Women and children were carried up in covered box-like palanquins known as doolies, or in open canvas sedan chairs. The canvas chair (see Fig. 30) was considerably more comfortable and twice as expensive.[2] Both types of conveyances required relays of four coolies to carry them. Transport arrangements were made in Periyakulam and as the hill-station became more popular, rival maistries took over the task of providing transportation for passengers and baggage to Kodaikanal. The supplies of ponies, bearers, and food for seasonal visitors became the principal industry of Periyakulam as the hill-station traffic increased.

The Tope bungalow had a bad reputation owing to its malarial location, so there was little desire on the part of the traveller to remain there longer than necessary. When all was ready the convoy started, purposefully noisily because of the ever-present danger of wild animals. The first two miles of the ghat path were of an easy gradient, but these were followed by four miles of steeper climbing. At the half-way milestone the coolies rested before the next stage known as "The Zig-Zags." Here the path had been cut out of the steep rock cliff for three miles of short, steep, hair-pin zig-zags, where there were no trees or any kind of shade. The final 1,000 feet to the Bund, the convoy's Kodaikanal destination, must have been a gruelling and tiresome pull, but for the holiday-makers it was no doubt quickly forgotten in the excitement of arrival. Some weeks later the entire journey needed to be repeated in reverse.

Difficulties of access were thus considerable. It was generally recognized that they formed the chief hindrance to a much speedier development of the hill-station at Kodaikanal, and efforts were frequently made to rectify this defect. On several occasions British officials had contemplated the establishment of improved means of travel to the hill-center, but rarely were the results very successful.

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[1] See J. Mahe, "The Days Long Ago: Some Reminiscences," in Bonnoure, Sacred Heart College, p. 14.

[2] The doolie cost Rs. 5.00 per coolie, and the canvas chair Rs. 10.00 per coolie. F. O. Bowen, A Hand-book of Kodaikanal (Trichinopoly: St. Joseph's Industrial School Press, 1932), p. 14.

The earliest efforts were mainly devoted to making the Coolie Ghat from Periyakulam safe as a bridle path. Francis pointed out: "By 1854 Rs. 4,500 had been spent on, or sanctioned for, the bridle path, but it was apparently still in wretched order."[1] By the following year further improvements were carried out and such efforts continued. Nelson claimed:

> A narrow and difficult ghaut leads from near Periyakulam to the settlement on the Palni Hills. Its average width in 1855 was 2 1/4 yards; but it has been improved since then and is somewhat wider. The slope is about 1 in 12, and the length from Krishnappanayakkan's tope to the summit 10 miles 3 furlongs.[2]

Neither gradient nor width are applicable, of course, to the three-mile stretch of zigzags where its width barely exceeded one yard and gradients remained extremely steep.

Though there were a great many tracks leading up to the hills from both north and south, and to the Lower Palnis also from the east, once the Periyakulam bridle path had been improved and made safe, all the other trails tended to become abandoned. In 1864 Hamilton clearly explained:

> There are six other passes to the higher Pulnis, but they are unmade, being tracks up which a pony can scramble with difficulty . . . Since the Periakolum pass has been constructed, the other passes have become nearly deserted. Traders with cattle from the north preferring to come all the way round, to ascending the rugged paths in that direction.[3]

Apart from within the hill-station itself, communications generally on the plateau were in no better shape. Reports about the possibilities of an improved road system were contradictory, though generally pessimistic. Hamilton pressed for a road from Bodinayakkanur. Suggestions had been proferred for a road from the north. The Madras gazetteers gave the reasons for its lack of completion as financial rather than engineering problems, but other reports claimed that a vehicular road to the north was quite impractical. In the 1870s the situation remained much as it had been summarized by Nelson earlier.

> With regard to the future prospect of the District . . . The Palnis offer great inducements to British capital; and probably planters will soon begin to settle upon them in numbers when the branch line of railroad from Caroor to Dindigul shall have been made. At present but little is known about them: and they are supposed to be inaccessible.[4]

The question of opening up good roads into the Palnis seems to have first been seriously considered at a government level in 1875 when Kodaikanal was still part of the Dindigul taluk. At that time the board selected Major Law, an engineer of the Madras Staff Corps, to investigate the entire situation and build a road suitable for vehicular traffic. Law discovered that the only work which had actually been carried out, apart from improving the Coolie Ghat, was the cutting of a trace northwards through Shembaganur and the Vilpatti valley. Work had been deputed to a native surveyor and matters were in abeyance as the trace stopped at an impassable precipice. Law realized that a far more practical proposition was to use a route through the Lower Palnis eastwards. He traced a route through Neutral Saddle, the natural boundary between the Upper and Lower Palnis at the foot of Perumalmalai, a square-topped, isolated high peak, the local landmark of Kodaikanal (see Figs. 28 and 31). By 1878, Rs. 43,000 had been spent on the work. The upper ten miles were fit for wheeled traffic, the next thirteen were rideable and the last seven partly cleared. An estimate for Rs. 3,20,000 was sanctioned for its completion. The road was not finished, however. The story continued: "On 1st July 1878 Colonel Law retired, and scarcity of funds resulting from the Afghan War prevented the allotment of the money sanctioned. Nothing more was done until the Attur ghat was begun."[1] In effect nothing was done until 1916 and visitors continued to be carried up the Coolie Ghat.

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[1] Francis, op. cit., p. 251.

[2] Nelson, op. cit., Part V, p. 59.

[3] Quoted in Shortt, op. cit., Part V, p. 62.

[4] Nelson, op. cit., Part V, p. 122.

The Attur Ghat was also considered and abandoned through lack of funds. It was finally completed as a dirt road some twenty years after Indian Independence but is still not used with any regularity because of the danger of washouts during heavy rains (for its location see Fig. 28).

Another proposition to encourage the development of Kodaikanal was the construction of a railway to Kistnamma Nayak's tope. This would at least have eliminated the need for transit

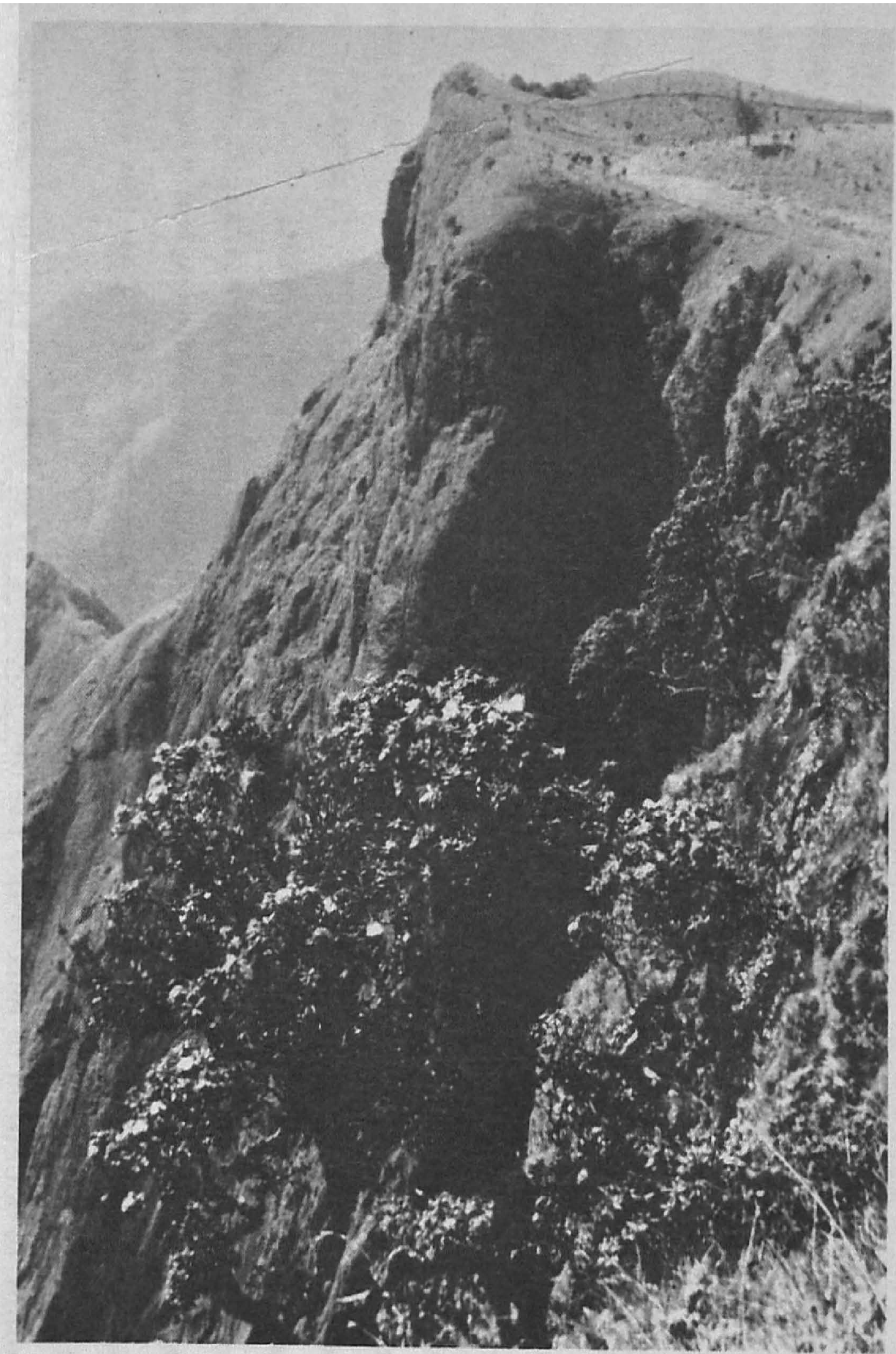

Fig. 32.--The steep southern scarp slopes of the Palni Hills are not conducive to road building.

Early Development of the Settlement

For all the difficulties of accessibility and the criticisms of its location, the hill-station at Kodaikanal grew steadily. Accounts of its growth are recorded in both British and American sources.

It was the British, of course, who organized the sale of land. The Upper Palni territory was apparently not considered to be private property. As stated by the Governor in 1860:

> It is an important fact that as regards much of the largest portion of this tract there is no claim to the soil which can interfere with the most absolute freehold; the villages are few and far between, and the rights of the inhabitants are confined to the land they cultivate.[1]

At first land was only rented, but before the turn of the century it was possible for individuals to buy land with the sanction of the government. The situation was explained by Francis:

> Much correspondence took place regarding the terms on which the government should grant the land on which the houses stood. It was finally ordered that the rules for the Nilgiris should be applied and an annual charge of Rs. 5-4-0 be made for the first kani (1.32 acres) occupied, and Rs. 2-8-0 for every additional kani.[2] Eventually most of the original grants were converted into freeholds.[3]

As land was cheap, it was bought both by missions and individual owners in fairly large lots, and these formed the basis for the entire compound, a feature still largely in evidence. Very often, only one main house was originally built on a compound, together with the necessary godowns and servants' quarters. The rest of the ground was landscaped, frequently planted in stands of trees which produced firewood for cooking and heating purposes, or fruit for eating, and were thus of utilitarian as well as scenic value. As the mission or civil service stations grew, so that more people came to the hill-station, more houses were added within the original compounds, a process which is continuing on some of the compounds yet today.

Within the first five years a total of nine or ten houses had been built on individual compounds.[4] The Americans had added "East House" to their original two, as well as the bungalow for Rev. Noyes on the site of the present "Woodstock" house. Five had been constructed by the British: "Pambar," home of Mr. Parker, the Collector of Madurai, "Roseneath," Mr. Clarke the Sub-Collector's house, the Baynes bungalow built by the Judge,

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[1] Quoted in Shortt, op. cit., p. 71.

[2] Ten acres of land would thus have cost approximately $10.00 at that time, a U.S. dollar being worth about Rs. 2.00.

[3] Francis, op. cit., pp. 251-52.

[4] This number does not include servants' homes, godowns, etc.

Blackburne Shola, and the Horsely bungalow later known as "Charlemont."[1]

The 1850s showed several distinct indications that the hill-station was becoming recognized and that it portrayed the camaraderie so important to the well-being of its foreign visitors. A few more houses were added, two of which belonged to people considerably further afield than Madurai. The American Jaffna Mission decided to send some of its Ceylon workers to Kodaikanal and built "Jaffna House" for their use. The first long-distance British visitor arrived about 1852. He was Major Partridge of the Bombay Army. At first he pitched tents at the bottom of the lake basin, but tempestuous weather soon drove him to erect a sturdier shelter, and he built a house on the compound which became known as Bombay Shola.[2] He is renowned as the man who imported Australian Eucalyptus trees to Kodai.

By the mid-1850s the houses within the settlement had been connected by a mile of road which the missionaries had built, and six more miles paid for with British capital. Co-operation was evidenced also in other directions. In 1853 a group of twelve American and British representatives met at Pambar House and resolved to take up a subscription from both groups to build a communal church. Trustees were chosen and work was completed, though not without management difficulties. For many years Church of England clergymen alternated with American Congregational missionaries in conducting services, both according to their own form. Before the end of the 1850s, this "Church Under the Hill" as it was fondly called,[3] already needed its first enlargement and eventually both a large American (Union Church) and a new Anglican church (St. Peter's) were constructed.

The 1860s showed signs not only of a continued steady growth, but also of development in several further directions. The first of these came with the arrival of the Roman Catholics, who brought Frenchmen, Belgians, and other Europeans into the hills, together with a new outlook, that of evangelizing the existing Indian villages on the hills. Though the American missionaries had instituted Tamil services for local Indian peoples, these were largely their own servants who had accompanied them up from the plains. Father St. Cyr, having visited Kodaikanal in 1852,[1] bought the Baynes bungalow in 1860 as a rest center for Jesuit Fathers, and by the following year had built a chapel on the compound and renamed it "La Providence." Two years later he purchased more land and completed "La Salette" as the Kodaikanal Catholic parish church.

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[1] There seems to be no record of the date for the construction of the French coffee planter's residence at Shembaganur, though he was an early visitor.

[2] Francis, op. cit., p. 251.

[3] The church was opened to Tamil services in 1856 as the Indian congregation preferred to sit on mats on the floor. English services were inaugurated only during the following year, by which time pews had been installed. The roof of the church was constructed, apparently, entirely of Huntley and Palmer biscuit tins. An American bell was put up in 1858, a year of heavy rains which caused the entire belfry to collapse, so much of the work had to be redone. The church was enlarged in 1860 and again in 1865-6. When the new church was built by the Madura Mission it became too expensive to keep up this old one, so it was dismantled and removed in 1902. A monument to this effect still stands in the Old Cemetery. For further details see: Chandler, op. cit., pp. 255-59 and 396-98, and Wyckoff, op. cit., p. 6.

Secondly, Kodaikanal received official recognition through a visit by the Governor of Madras. Sir Charles Trevelyan went up early in 1860 by the bridle path from the Tope. He stayed at Roseneath and wrote an official government minute recording his impressions of the hills. This set up a continuing tradition. In 1871, the new Governor, Lord Napier, visited and his shooting-lodge was renamed "Napier Villa" in commemoration of his stay there. In more recent years official visits have been made by India's prime ministers, by Jawaharlal Nehru in 1958, and Indira Gandhi in 1968.

The other new direction was in the appeal of the hill-station at Kodai as a good location for spending an entire furlough and also as a place of retirement. Word of Kodai's salubrious climate had by now spread generally throughout India. In 1867, Dr. Fairbank of the American Mahratta Mission and an important naturalist in the Bombay Presidency, was given a year's furlough. He chose to spend that year in Kodaikanal. Also in 1867, a Madurai Collector, Sir Vere Henry Levinge, retired to Kodaikanal, rather than return to his family home in Ireland at the end of his service in India. This set a precedent, which was frequently followed in later years. Levinge lived in Pambar House, which became the social center of the community. It was acclaimed by Europeans and Americans alike that most of the improvements in Kodaikanal were due to his interest and generosity.[2] He constructed the bund which dammed the stream to form Kodai Lake, stocked the lake with fish, and brought up the first boat from Tuticorin.[3] He completed improvements to the Coolie Ghat and established new roads within the settlement. His experiments with foreign varieties of trees, fruits, and flowers have had enduring results as Eucalyptus, wattle, and pines are now grown extensively by the Forestry Department, and pears have become an important export from the hill-station at the present time. Many of the vegetables he tried are planted today in large quantities in Kodaikanal and the surrounding villages. In the same decade Lieutenant Coaker of the Royal Engineers, cut a path which bears his name, along the outer edge of the steep southern plateau rim. It commands spectacular views of the plains and became one of Kodai's favorite attractions.

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[1] For a detailed account of his journey and visit see: P. François André, Vie du R. P. Louis Saint-Cyr de la Compagnie de Jésus (1813-1887) (Paris: Retaux-Bray, 1889) pp. 239-41.

[2] A red granite monument in the form of an Irish cross, proclaiming his achievements and popularity as a British Civil Servant, as well as his work for the hill-station at Kodaikanal, was erected in his memory at Coaker's Walk, and later removed to a more prominent position at the lake bund.

[3] This was an old lifeboat, painted green, and renamed "The Lily." It was especially appreciated by children for the next half-century, as it was the only boat they were allowed to row, being considered unsinkable. See: Wyckoff, op. cit., p. 9.

The greatest boost to the growth of Kodaikanal in the nineteenth century, came after 1875 through the extension of the railway to the southern extremities of the Presidency. Its effects were not immediate, as the difficulties of transits and the ghat trip remained unchanged, but over a period of a decade and a half, they were impressive.

In 1876 Shortt claimed that Kodaikanal: "contains at present 20 substantial European[1] and over a hundred native houses."[2] It could thus be estimated that probably 50-60 Europeans came to the hill-station and perhaps five times as many Indians. Very few of the Europeans would have considered themselves permanent residents, though on occasion their stay was more than just a few weeks. Many of the Indians, however, did remain throughout the year. Some of those who had left the plains probably found that seasonal work in Kodai was more remunerative than their previous way of life had been. Many owned homes and plots of land in Kodaikanal and some had permanent employment with the small but growing number of Europeans. Four years later in 1879, Wyckoff, who had access to considerable private records, stated that 75 Europeans came to Kodai.[3] By the mid-1880s the picture began to change more rapidly. Official records state: "There were 30 European and 130 native houses in the beginning of 1884. The population according to a return made in the beginning of December 1883 was 615."[4] The 615 represent a permanent nucleus, as the count was taken at a non hill-season time of year. Wyckoff claimed that by the mid-1880s the permanent European population was approximately 100,[5] leaving a permanent Indian nucleus of about 500. The European residents included retired British civil servants, wives of army personnel or others whose work frequently took them away from home, mothers of small children, and persons in poor health. During this time the number of Europeans visiting the station for the season had increased from 75 half a decade earlier, to 400.

Expansion soon became rapid. Land was bought at much faster rates than ever before as people were encouraged by an awareness of probable sudden price-rises, and buildings began to mushroom over the entire basin and more distant ridges. By 1890, a year of the first official census at Kodaikanal, which was taken early in the year thus counting permanent residents only, the government statistics showed that there were 1, 743 residents at the hill-station. This represented approximately a 300 per cent increase in less than a decade, and perhaps a 400 per cent increase within fifteen years.

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[1] The term European is normally used in India to refer to all people of European extract including those from the North American continent. It does not, however, include Anglo-Indians or other Eurasians. Shortt's figure thus referred also to the American missionary bungalows.

[2] Shortt, op. cit., p. 68.

[3] Wyckoff, op. cit., p. 13.

[4] Manual of the Administration of the Madras Presidency, II (Madras: Government Press, 1885), 84.

[5] Wyckoff, op. cit., p. 14.

Such remarkable expansion did not continue, however. Once the European population in South India were all able to reach a hill-station, there was no further need for vigorous expansion. So, although the increase in permanent residents between 1880 and 1890 was more than 1, 600, the increase between 1890 and 1900 was less than 200, with a new total of 1, 912. Obviously the railway expansion had made visits to a hill-station a possibility for all Europeans working in South India. Once that had been accomplished, the hill-station increase depended largely on an increase in the number of Europeans who came to South India. The hill-station was still very much a feature of colonialism, not affecting the Indian population to any considerable degree, except for those working as servants.

Settlement Pattern

Kodaikanal lake lies approximately at the center of Kodaikanal Basin, an irregular trough over 7, 000 feet in altitude, which is roughly a mile and a half long and a mile wide and follows the general NE-SW trend of the plateau spur. The basin is surrounded by higher ranges and peaks, which in the west reach over 8, 000 feet. Beyond the basin eastwards the land drops rapidly to the Lower Palnis, disclosing fine views of Perumal hill, which appears much higher than its 7, 300 feet (see Figs. 27 and 31).

The major center of activities remained along the eastern and southern shores of the lake between the bund, the northern extremity of the lake and site of the original dam, and the old cemetery at the site of the early church near the southern shore, and southeastward gently up towards the precipitous southern rim of the basin, which to the east overlooked a growing native bazaar and to the south gave panoramic views of the plains 6, 000 feet below. In these areas were the majority of the large, spacious European compounds. The clubs and hotels, together with many bungalows, were located near the lake. The two newer churches, Union Church and St. Peters, were at either end of the nearest, most prominent, and hence most popular section of the scenic southern rim. Between them also lay many early bungalows. The two churches were linked by a good interior road on the inner slope of the rim, which extended to the communities at the lake edge, and by Coakers Walk, a narrow footpath cut into the steep outer slope of the rim, overlooking the entire span of the Kumbum (Upper Vaigai) Valley below. The Catholic compounds, including La Providence, St. Mary's, and La Salette, were on somewhat higher but further distant, more westerly sections of the southern rim. Those compounds near the center of activities became sub-divided during the rapid expansion of the last quarter of the nineteenth century to contain more houses. Those at greater distances towards the northern and western lake shores, remained larger and with fewer sub-divisions.

A new feature of the expanded hill-station was the development of an Indian quarter, set apart from the European compounds. Though personal servants, often brought up from the plains seasonally, still lived on the compounds as before, many more Indians arrived by themselves. They set up shops to the east along the upper stretch of ghat road on the outer slopes on the eastern edge of the plateau rim rather than within the inner slopes of the basin facing the lake. Or they occupied small homes and plots of fields below the level of these shops and main Indian village, which became known as Munjikal. On these fields they grew European vegetables for sale at the hill-station. Many of them hired out their services on seasonal contracts. One aspect of the hill-station's plural society was thus visible in the distinction between the densely populated main Indian nucleus outside but near the eastern rim of the basin, and the sprawling European zone inside the basin (see Figs. 34 and 35).

With expanding population in the late nineteenth century the road system was greatly expanded. It adopted its present basic structure, a simple pattern with a Lower, Middle, and Upper Lake Road surrounding the lake, each parallel, though running together in the north at the bund. The three roads were joined and crossed by many linking radial roads. The Coolie Ghat led up to the basin from the south from the plain into the bazaar at the eastern edge of the basin. In later years the improved Law's Ghat Road was eventually completed. It crossed and recrossed the Coolie Ghat, and skirting Munjikal, approached the lake bund from the northeast (see Fig. 36). Also during the years, circular roads of varying circumference were added westwards to link local scenic beauty spots in the higher western hills.

Year-Round Activities

In the earliest formative years of the hill-station at Kodaikanal, there seems to have been little doubt that for the British at least, there were two major streams of thought with regard to possible activities in the hill-station. The first was the obvious use of the hill-station as a seasonal recreational center. This is the use to which it was predominantly put, and was the only use at first considered by its American clientele. The British, however, also thought in terms of permanent settlement, in which the hill-station would be one part of a large-scale development of the Palni Hills. Many of the early surveys were particularly concerned with climatic and health conditions, types of soils and grasses, availability of land, varieties of plantation or other cash crops which could be grown in different sections of the hills, and other matters which presume more than just an objective description of the territories under their jurisdiction. For example, Parker, Collector of Madurai who took office from Blackburne in 1847, wrote in his survey report of 1854:

> I think it necessary to observe that I see no reason for the acknowledgment of any right whatever on the part of the villagers to lands at a distance from their villages, which they have never occupied. They are not like the Todas of the Neilgherry Hills, who require large tracts and at one time or another in the year actually occupy them for the grazing of numerous herds of cattle . . . These people are agriculturists, and occupy only such sites near the sides of the mountains as are favourable to cultivation, leaving large ranges of grassland wholly vacant. This fact I consider of great importance, as these downs may in time become very desirable locations for Europeans, either for the sake of simple residence or for grazing farms.[1]

His belief that land was readily available was endorsed by the Madras governor.

Parker was thus extremely frank about the possibility of Englishmen using the hills for commercial cattle or sheep-raising. There had been considerable discussion in the early years on the value of these grasslands for animal rearing. In his original survey Ward, though noting that: "on these mountains are the sources of upwards of thirty large streams," which implied that the hills provided sufficient water for cattle, nevertheless also recorded that "the pasturage found is deficient in salt, and therefore cattle do not thrive upon it."[2] His analysis, however, was severely criticized. Nelson claimed: "That this idea is inaccurate is proved by the fact that cattle brought up by Europeans from the plains get on very well at Kodikanal."[3] Shortt's comments were equally succinct:

> The cows certainly yield as much milk as the same breed on the plains, and if I may judge from the quantity of milk obtained from well-bred cows at Kudaikanal, the cause lies in the degenerate breed of the cattle and not in the pasture. . . A few Toda buffaloes might be imported with great advantage.[4]

There was also some discussion in the early years of the possibilities of sheep-rearing, but efforts in the Nilgiris had failed, probably because of the dampness, chilliness of the rainy season, and frequent boggy depressions. It had been pointed out that "sheep should be housed at night in a warm building with a boarded floor."[5] Apart from the more temporary arrangements of bringing cattle to the hills for hill-season milk supplies, there seem to be no records of either sheep or cattle ranches ever having been started by the British on the Palni Hills. Early plans did not materialize.[6]

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[1] Quoted in Nelson, op. cit., pp. 99-100.

[2] Quoted in Nelson, op. cit., pp. 95-96.

[3] Ibid., p. 96.

[4] Shortt, op. cit., p. 66.

[5] Ibid., p. 70.

[6] In the 1950-1960s several dairies were organized on a co-operative basis. Many of them fared badly and went out of business, blaming the poor nutritional value of the grasses. However, Sacred Heart College at Shembaganur maintains a highly efficient

More important perhaps, than animal-raising, were the possibilities of plantations and farms. The early surveys gave descriptions not only of crops grown and traded by indigenous peoples, but suggested also the types of plants which European farmers might find most profitable. Crops seriously considered for plantation purposes were tea, coffee, cardamom, and cinchona in the Upper Palnis, together with farm crops such as garlic and European vegetables; and a great variety for the Lower Palnis including: turmeric, ginger, cinnamon, nutmeg, grapes, mangoes, citrus fruits, and plantains.

As expected, tea was widely considered by the British and was experimentally grown in several gardens. But all such early efforts came to naught and tea was eventually planted on the wetter, west-facing slopes of the Anaimalais and Cardamom Hills. Coffee, on the other hand, has become a successful plantation crop on the Palni Hills, with their position on the drier lee-shadow slopes of the mountains, but on the Lower rather than the Upper Palnis, the Kodaikanal heights of over 7, 000 feet being too bleak and exposed to mists and cold. Cinchona and cardamoms were also found to require milder conditions than generally experienced in the Upper Palnis. Both needed considerable attention and thrived best in sholas of lower altitudes. Though European fruits and vegetables did extremely well at the higher altitudes and were widely grown locally in small quantities, there are no records of any large-scale farming being undertaken, except that organized by the Jesuit mission at Shembaganur.

In the Lower Palnis a wide interest was taken by British business men only in coffee plantations. The growing of other crops remained largely under local management, in a shifting-cultivation method of planting which the British endeavored to terminate because of its disastrous effects on soil erosion.[1]

Thus animal-breeding and plantation agriculture or large-scale farming by Europeans never became part of the hill-station scene at Kodaikanal as they had, for example, at Munnar in the Anaimalais, Ooty in the Nilgiris, or Darjeeling in the Eastern Himalayas. Suggested reasons for this were threefold: problems of accessibility, shortage of labor in the hills, and fever conditions on the lower slopes.[2] The first of these reasons was also

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dairy. In 1970 a commission, including Indian and New Zealand government Food Department officials, visited the Upper Palnis and on their recommendations a block of 500 acres of land near Kukkal has now been made available for cattle rearing. It is intended to approach UNICEF for New Zealand and Danish mission aid to build a model dairy here.

It is also of interest to note that in the mid-1960s an Australian farmer brought 100 hybrid Corriedale-Romney Marsh-Southdown sheep as a gift to the Department of Agriculture. A sheep farm was set up at Mannavanur which by 1971 has developed into a flourishing experimental station. Imported and local Coimbatore sheep are being crossed to produce better varieties of meat and wool. The center is now known as the Central Sheep and Wool Research Sub-Station.

[1] See particularly Clarke's report of 1853, as quoted in Shortt, op. cit., pp. 77-78.

[2] See especially the arguments set forth by Beddome, Inspector of Forests, as quoted

of primary concern regarding the decision not to establish military barracks in the Upper Palnis at Fort Hamilton.

At the end of the nineteenth century, Kodaikanal was, however, chosen as the site for an astrophysical observatory. Already in 1792 the East India Company had established an astronomical observatory in Madras "for promoting the knowledge of astronomy, geography and navigation in India."[1] As an institution for the study of telescopic astronomy this was one of the older observatories in the world. Approximately a century after its foundation a high-altitude station was recognized to be a more suitable location for such work and Kodaikanal was chosen because of its comparatively clear skies and favorable weather conditions. The foundation stone for the Kodaikanal Observatory was laid by the Governor in 1895 and three years later work commenced.

Seasonal Activities

Kodaikanal's main functions as a hill-station in the nineteenth century were almost entirely limited to its seasonal activities. At first the European visitors were few in number and social events often included the entire group, both British and American. As properties were privately owned, individuals returned regularly to the same houses each season and newcomers were welcomed into a long-established community. This close fraternity existed almost to the end of the century. When the effects of the Southern Railway extension, which made Kodai more accessible to all Europeans in the southern sectors of the Madras Presidency, began to be felt by the mid-1880's, however, this early camaraderie was no longer possible. In the 1890s then, changes took place and club activities became predominant.

Kodai's early seasonal activities developed largely according to the tastes of its more dominant personalities. They included hunting and fishing, fern and butterfly collecting, sports and boating, picnics and social teas. Because of the full-length dress styles, whether hooped or hobbled skirts, the womenfolk were largely excluded from sports activities unless they rode side-saddle on horseback over the downs, but they played a predominant role in other social affairs. Throughout the years natural history specialists discovered rare birds or plants, or investigated the archeological significance of the dolmens as well as the scenic beauty of the waterfalls and caves, and they inspired others to follow in their footsteps.

In the early years hunting was to some extent a necessity as well as a sport, both to lessen the dangers due to the proximity of wild animals, and also to increase the limited

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in Shortt, op. cit., p. 79; and Nelson's discussion in Nelson, op. cit., p. 95.

[1] Quoted in: India Meteorological Department, Modernisation of the Astrophysical Observatory, Kodaikanal (Faridabad: Government of India Press, 1960), p. 1.

meat supplies for domestic consumption. Tigers, panthers, wild hog, jackals, and bears frequented the Palni ranges, and thus challenged the skills and spirit of adventure of the *holiday-makers and gaur, sambar, thar, spotted deer, and other varieties of wild animals* were largely edible, giving excuse for frequent shooting expeditions. As the hill-station became more populous, most of the animals retreated to safer distances so that the hunters also needed to venture further afield.

Butterfly and fern collections were important hobbies throughout the early years. In the 1870s it had become popular for women to attend social functions dressed in dark woollen dresses which were ornamented with pollen from the silver fern. This was a deep-green ruffled fern which grew in certain gullies of difficult access. The men plunged down into the *sholas* to procure the ferns and the women pressed them on to dresses, and thus had silver replicas of the ferns from the powdery pollen on the backs of the plants.

Sports activities were numerous. Apart from hunting, fishing, riding, swimming, and hiking, which took place outside the actual settlement, there were many activities of a more local character. Wealthy visitors brought up boats for the lake. The early compounds each contained a tennis court and tennis matches became part of the established seasonal activities as well as halma and badminton tournaments. Bicycles were frequently carried up as part of a coolie's headload for use in the settlement. Bicycle parties were popular for several decades.

Other social events included picnics, teas, parties, dances, concerts, and theatrical entertainments. In the early years it was the duty of each new arrival at Kodaikanal to make a formal call upon every other resident. This renewed acquaintance from previous years and welcomed newcomers into the community. The picnics and teas were often associated with some type of sports activities, such as tennis tournaments. There are also accounts of fifty or sixty people sitting down to snowy white table-cloths spread on the ground at Silver Cascades or Pillar Rocks and being served enormous meals by butlers.[1]

Before the turn of the century, however, changes came to the hill-station due to its increased population. When several thousand people arrived in the hills during one season, the closeness of these earlier primary relationships disappeared. Efforts were purposefully made to keep up friendly contacts, at least with others of similar interests, and thus various clubs sprang into existence. These clubs formed the basis for seasonal activities throughout the European era. Even the clubs, however, soon showed rivalries between different factions of this large clientele, especially between American and British, and between missionary and non-missionary. This gave rise to a popular slogan of the 1890s, a misquotation of a report in the Calcutta *Pioneer:*

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[1] Wyckoff, *op. cit.*, pp. 17-18.

When Kodai Spiritual departs
The Kodai Carnal season starts.[1]

The development of the clubs originated with an effort to regain lost unity. In idea, however, it had existed even before the formation of the hill-station. Fane, in his letter to the Madura missionaries in April, 1845, had already suggested the possibility:

> As you talk about building, and as I know that building is very expensive, and knowing that besides myself many of the gentlemen in this district would willingly subscribe and build a club house . . . and also a small monthly subscription amongst the shareholders would enable us to keep up the place in gardens, etc. I propose such a thing be set on foot, if you gentlemen and Elliot agree to it . . . The whole might be finished and set up before next hot weather.[2]

Nothing had developed from the idea at that time, as sufficient individuals could afford to construct private properties. For many years Pambar House was the location for all important social gatherings. When a larger club house was deemed necessary, Americans and British united to subscribe to a suitable building with tennis courts, as they had previously collaborated to erect a church.[3] The Kodaikanal Club was opened in 1887. Through the years it became known as the English Club. At least two other clubs were actually formed before the turn of the century, but their activities belong to the following era.

During these formative years of the hill-station its activities were thus essentially European amusements with the early co-operation between various strata of Europeans changing to competition when the population increased considerably at the end of the nineteenth century.

Range of Hinterland

By the year 1850, with ten European bungalows and perhaps twice as many Indian huts on the compounds at Kodaikanal, its hinterland was limited to the Madurai District (see Fig. 33:1). The hill-station clientele consisted of approximately twenty Americans of the Madura Mission and about as many British civil servants from the Madurai District. Records also show that a few coffee planters, at least two British and one Frenchman, had settled in the Lower Palnis, and they presumably visited the hill-station during the season.

By 1870 the numbers of visitors had risen by approximately one third (see Fig. 33:2). British and other European missionaries, including Anglicans and Catholics, were now visiting the hill-station. Its clientele was still largely restricted to those from the Madurai

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[1] The actual quotation reads: "During the months of April and May--the missionary season--black-coated padres fill the air with the odour of sanctity. When Kodai Spiritual departs, the Kodai Carnal season commences with the first rains."

[2] Quoted in Chandler, Madura Mission, p. 88.

[3] For an account of the early history of the club see Wyckoff, op. cit., p. 20.

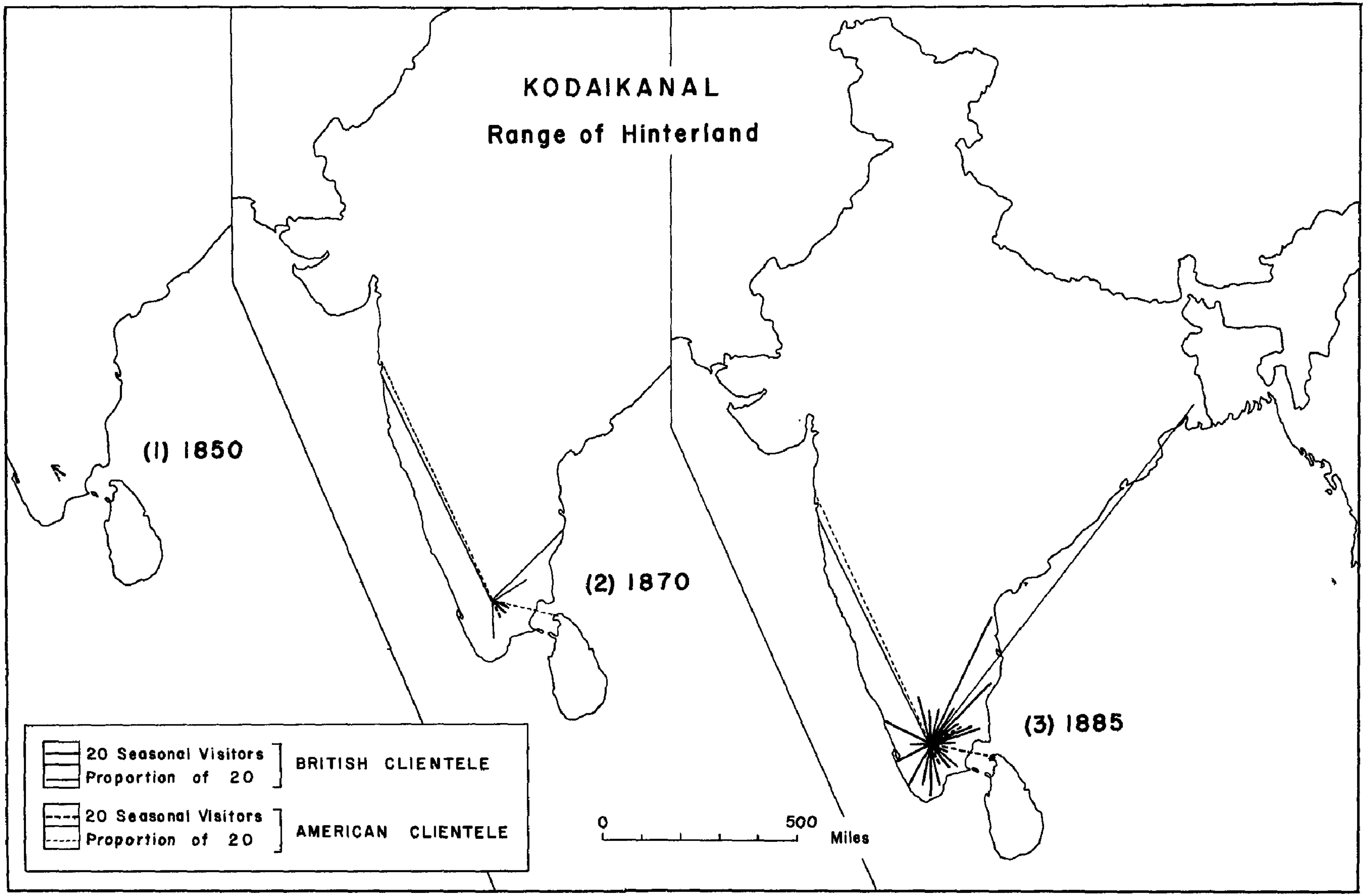
KODAIKANAL
Range of Hinterland
(1) 1850
(2) 1870
(3) 1885
20 Seasonal Visitors
Proportion of 20
BRITISH CLIENTELE
20 Seasonal Visitors
Proportion of 20
AMERICAN CLIENTELE
0
500
Miles

Fig. 33

District, but isolated visitors such as Dr. Fairbank and Major Partridge arrived from Bombay; a few American missionaries sailed regularly from Jaffna; occasionally a British padre like Bishop Caldwell attempted the two-hundred mile journey north from Palayamcottai, or a government official came from Madras; certain influential Indians visited the center, such as the Raja of Puducottai and a barrister from Madras.

The greatest expansion which took place after the railway extension was already noticeable by 1885 (see Fig. 33:3). The transit system had been set up and arrangements were now well-organized for coolies and conveyances to be available for the last stretch of the ghat road. As the hill-station became more popular, people were attracted not only from the southern sectors of the Presidency and neighboring native states, but many from Madras city and more northern districts chose to visit Kodaikanal rather than the earlier sites in the Nilgiris. Occasionaly long-distance visitors from as far away as Bombay and Calcutta are mentioned in the records.

After 1890 when the permanent residents numbered nearly two thousand, no detailed records are available showing the precise origins of the hill-station visitors. It is unlikely, however, that they came from different parts of India, as such information would probably have been recorded. The northern Indian territories were already well-served by Himalayan stations, so that people did not need to undertake the long journey south. Visitors from Bombay or the East Coast wishing to enjoy a high-elevation hill-station probably continued to travel to Kodai which was not more difficult to reach than the equally distant Himalayan stations. One can thus assume that the range of hinterland remained through the rest of the nineteenth century much like it had been in 1885.

Involvement of Indigenous Peoples

Three distinct types of Indians became associated with the hill-station from its early years: an Indian elite, who used the center together with the Europeans; servants and traders, who formed the largest group of permanent residents and for whom the Kodaikanal municipality was established; and nearby agriculturalists from local hill villages, who were able to use the hill-station to market excess produce.

Indian Elite at the Hill-Station

The hill-station at Kodaikanal was clearly created by British governors and American missionaries for the convenience of Europeans. The programs of activities were chiefly of interest to the European communities. Most of the Indians at the station were servants or merchants whose primary function was to serve the European clientele.

However, already in the nineteenth century some Indians followed the example of the British. They bought property in Kodaikanal, built bungalows for themselves and their servants on their compounds, planted beautiful gardens, played tennis, and joined in all the season's activities, sometimes even taking a lead in new ideas. One such was the Puducottai raja. In 1894, the Kodai correspondent to the Madras Times, paying tribute to him claimed: "Kodaikanal was a sleeping princess till the touch of the prince woke her to life."[1] He started several innovations at Kodai, including large-scale formal socials and international tennis matches which are still part of the Kodai tradition.

Kodaikanal Municipality

In the early years of Kodaikanal, servants and supplies were brought up from the plains, but with the greater influx of seasonal visitors and permanent residents starting in the 1880s, opportunities were opened for local trade to merchants who came up from the plains and for local employment for other workers. A bazaar arose on the last lap of the coolie ghat on the eastern outer edge of Kodaikanal Basin. One of the earliest shops was Creighton & Co. supplying meat and bread. The company also made arrangements for transportation back down the ghat. Groceries could be purchased at the Kodai Stores Depot, or direct from vendors who carried headloads up from the plains. One of the early shops was an Indian arts and crafts Emporium.

Merchants set up shacks wherever they pleased along the road-sides. Water was carried from the nearest spring or well and there was no checking of sanitation in the bazaar, or of foodstuffs sold, and no control of prices.[2] In the 1890s conditions grew particularly unpleasant, as together with the increased population, diseases, thieves, and rogues also made their way up to the center.[3] Complaints to newspapers and authorities became frequent.

In the last year of the century Kodaikanal was constituted a municipality, the smallest in the Presidency with a population of 1,912 permanent residents.[4] It thus became the responsibility of the municipality to establish law and order.

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[1] Quoted in Wyckoff, op. cit., p. 16.

[2] Plans for a sanitary water storage and piping system were first made in 1902. See Francis, op. cit., p. 227.

[3] Records show an outbreak of plague in 1891. Unrest was demonstrated by theft increase and in the burning of three thatched boat-houses by incendiaries.

[4] A settlement of less than 2,000 people rarely qualifies to be classified as a township anywhere. For a country such as India where settlements of 20,000 are usually known as villages, it is clear that hill-stations cannot easily fit into any classificatory scheme of settlement morphology. The functions and social aspects of Kodaikanal, not its numbers or structure, decided its recognition as a municipality.

Local Hill Villages

The early visitors to Kodai brought up their own supplies of basic foods, including cows for milk. They hunted and fished to obtain meat, kept chickens, and grew vegetables on their compounds. Upper Palni villagers presumably offered to sell them fruits and other local produce as they still do today. Some of them supplied Kodai store-keepers after the formation of bazaar facilities, while others continued to walk from compound to compound to vend their wares. No effort was apparently made from the hill-station to organize the nearby villages as food-supply centers, but many of the villagers themselves recognized the benefits such supplies could bring them.

Though the British did not farm the Upper Palnis as the early surveyors had expected them to do, to some extent the Jesuit groups did. Pear orchards were set up at La Providence and elsewhere; experimental plantations developed at Shembaganur; and considerable crop varieties were grown besides coffee at their Palamalai and other estates of the Lower Palnis. The Jesuits were able to supply Kodaikanal with fruit and vegetables as well as obtain self-sufficiency among their own establishments. Because of their active involvement in bringing Christianity into the local villages they also had some level of influence, at least by example, suggestion, and assistance, in and around the local villages.

Secondary Stage: First Half of the Twentieth Century

The secondary stage in the development of the hill-station at Kodaikanal represented an expansion of all phases of hill-station life which had been founded during the latter half of the nineteenth century, including seasonal visitors and permanent residents, foreign and native involvements, types of settlement patterns, and activities. The hill-station continued to grow steadily through the years. It remained predominantly a recreational center, with an ever-increasing permanent community serving the growing needs of its expanding hill-season clientele, who were primarily Europeans in a colonial era.

Expansion of Government Services

Expansion of government services frequently led to improved accessibility, which in turn resulted in population growth and new movements. This became a repeating and expanding cycle already evidenced in its early stages by the beginning of the twentieth century.

The general area of the Palni Hills had been reorganized by the British government of Madras in 1889, when instead of being divided among various surrounding districts, the hills became a separate unified territory, a subdivision of the Madurai District known as Kodaikanal Taluk. In 1899 when Kodaikanal was created a municipality, it became the taluk headquarters. Legal channels for the collection of taxes and the improvement of amenities were thus organized. However, since the majority of Kodai's visitors were not taxable and properties contained no factories or large money-making concerns taxes were insufficient to support all the projects necessary to a growing town.

From its formation until the new Government of India Act of 1935, the Municipality consisted of a Town Council of twelve members, three of whom were officials, and the others non-officials. The Chairman of the Council functioned as the chief executive and ex officio head of all departments of municipal administration. After 1935 Commissioners were appointed by the government as department heads, while other Council members were elected.

Of the problems faced by the municipal council, one of the most urgent was that of poor sanitation. An obvious starting point to rectify the situation was to procure pure drinking water. A scheme which included the construction of a dam on the Pambar River system near Fairy Falls and a set of cisterns and open channels to the reservoir and thence throughout the hill-station by pipes was worked out by the municipality in 1902 at a cost of Rs. 49,000. Before its acceptance, however, changes were deemed necessary which included the building of a solid masonry dam and raised the estimated costs to Rs. 62,250.[1] The municipal receipts for these early years of the new century were approximately Rs. 10,000 per annum and assistance had to come from the government.[2]

Another long-standing problem was Kodai's inaccessibility. Several attempts had been made in the previous century to lay traces for a good carriage road and to connect the existing ghat trails by rail, none of which had fully materialized (see "Problems of Accessibility," earlier in this chapter). At the turn of the century steam-propelled motor vehicles began to arrive in India. The Raja of Puducottai owned a French-manufactured car already in 1904, but it could not be used for Kodai as there was no road. In 1905 a resident of Kodai induced a Trichinopoly motor company to establish a bus service from Kodai Road Station to Periyakulam, with a detour to the Tope. This eliminated the slow transits and reduced the journey from the station so that the entire trip could be done in daylight hours. Work on Law's Ghat Road was also recommenced by the Public Works Department and the governor, Lord Pentland, came to open it in 1914. However, it was not yet safe for general traffic and remained closed for two further years. Several of Kodai's permanent residents drove up in cars and motor-bicycles in 1916, leading the way towards an irreversible trend. Kodaikanal Municipality became alarmed at that time at a possible automobile invasion for which Kodai roads were ill-suited. They passed a bye-law prohibiting the use of motor vehicles within the settlement. With no penalty attached, however, the bye-law was seemingly disregarded. Road improvements were started as quickly as possible and the law repealed. Within two to three years the maistries and coolies at Periyakulam retained almost no employment.[1]

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[1] Francis, op. cit., p. 227.

[2] Imperial Gazetteer of India, Provincial Series, Madras II, 243.

With each improvement in turn, Kodai became more easily accessible, and this accessibility was reflected in the growth of the hill-station. Between 1891 and 1901 the permanent population had increased by only 200. This represented the period after the results of the railroad extension had already been effected and it was still necessary to wait all day at the railway station to travel through the cooler night by transit and chair. Between 1901 and 1910 the population rose from 1,912 to 2,906, an increase of almost a thousand. The period in question was the time of the installation of bus services from Kodai Road Station to the Tope so that the journey to the hill-station could be completed before dark. Between 1910 and 1920, the decade of the construction of the motor road and of buses direct from the railway station to the hill-station, the population rose to 4,283, a further increase approaching one and a half thousand. After the 1920s cars increasingly became more easily available to larger numbers of people, making the ride to the hill-station considerably less difficult each year for a greater proportion of visitors within driving distances. Though not the sole reason for the expansion of the hill-station during these years, greater accessibility together with sufficient space for expansion, were obviously important factors. The census figures show permanent population rises to 6,523 in 1930, 9,724 in 1940, and 10,941 in 1950.

The permanent population increases in their turn reflected the seasonal population increases. As more holiday-makers visited the hill-station, opportunities for trade and services became greater and many Indians who sought their fortunes at the hill-station remained there. The actual numbers of seasonal visitors was not regularly recorded, but where such figures, or estimates, are available, it appears that the seasonal population varied from approximately one-third to one-half more people than the permanent population.[2]

The government attempted to beautify the station with a park, named Bryant Park after the pioneering officer. In 1920 the Forestry Department put the park under the control of the Curator of the Botanical Gardens in Ootacamund, who soon discovered that he was unable to supervise work in both places. In 1924 responsibility for the park was transferred to the Kodaikanal Municipality, together with an annual grant for its maintenance.[3]

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[1] Wyckoff, *op. cit.*, pp. 28-29.

[2] Figures available from various sources of unknown reliability are:
1909 in season 4,025, compared to 2,906 out of season (1910)
1920 " " 6,069, " " 4,283 " " "
1930 " " 9,857, " " 6,523 " " "

[3] Season Committee, Kodaikanal Township, *Summer Festival, Kodaikanal* (Madurai: Noble Press, 1969), pp. 14-15.

The municipality also made itself responsible for the improvement of the bazaar conditions of the town. Controls were set up to safeguard the prices and quality of foods, and co-operative stores were established in 1919, owned and controlled on an economically sound basis by many shareholder residents of Kodaikanal. They are still a flourishing concern. A municipal market was opened two years later and the municipality established through the years several travellers' bungalows and rest houses for the convenience of government officials and tourists.

Still after the completion of Law's Ghat, the dhobies, or washermen, for Kodaikanal continued to live down in their Periyakulam homes. Early Saturday mornings they drove their donkeys up the deserted Coolie Ghat loaded with clean laundry which was distributed to its owners in Kodai while the dirty wash for the next week was collected and taken down. The dhobies preferred to live and work in the warmth of the plains. Though the municipality built a new dhobie-khana, a laundry establishment, by the side of a stream about two miles below the bazaar, it took several years before the dhobies became acclimatized citizens of Kodaikanal.[1]

Health services were at first established entirely on a private basis. Though officially classified as a health sanatorium in the early years, Kodai's chief health factor lay in its preservation by outdoor exercise rather than in the cure of sickness. Kodai claimed no true hospital at all in the nineteenth century. A room at the back of the post office at Rock Cottage served an apothecary until 1873 when a small building was erected for medical consultations at the site of the present P.W.D. Inspection Bungalow. Europeans, however, generally enlisted the services of civil surgeons or missionary doctors on vacation in the hills. Many are the stories of operations performed on dining-room tables, and doctors and nurses seldom received their full vacation. The Madura Mission medical personnel had so many serious cases in the early years of the century that East House was fitted up as an emergency hospital, and doctors started a subscription for an operation theater. Sufficient money was raised to construct the Van Allen Hospital in 1915, and it was expanded to include a maternity ward in 1923. Its expansion and maintenance have been entirely by private subscription and fees, various missions and some of the seasonal activity clubs being the major contributors.

In 1926 the governor of Madras laid the foundation stone for a municipal hospital. British medical doctors and Catholic missionary nurses who served the hospital for many years were replaced by Indian staff already long before Independence. Also in the 1920s, a government veterinary hospital was established to serve the growing numbers of farmers, fruit-growers, and market gardeners whose livelihood depended on their draft animals. Seasonal visitors also took pets to the vet for treatment. A Department of Health was established in 1939 with a resident officer in charge.

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[1] This reluctance on the part of the dhobies to settle at Kodaikanal was probably also related to earlier British attitudes, as well as to climate. Still in the first decade of the twentieth century, laundrymen were prohibited from polluting the streams around the settlement. See: E. M. M. Loyd, Guide to Kodaikanal and Its History (London: Ward, Lock & Co. Ltd., 1909), p. 13.

The astrophysical observatory expanded during the years. Though basically a central government rather than a local concern, it nevertheless became involved in affairs of the local community: its director was for many years the municipal chairman; it encouraged student visitors; and it became an additional hill-season attraction. With British equipment procured in the first two decades of the century, together with its high altitude position in close proximity of the equator, its scientists produced high class solar research which gave the observatory an international reputation. A machine-shop was set up at Kodai which made it possible in the 1940s to build enough apparatus to keep a number of experimental research scholars busy on a variety of solar problems. In 1948 a new magnetic observatory was established at very little cost as many of the old instruments could be repaired and modernized at the local shop.

An unplanned responsibility of the municipality developed very early, rose to high peaks during the two world wars, and has seemingly become a tradition: that of using Kodaikanal for the internment of political prisoners. Already at the turn of the century the Wazir of Chitral and the Afghan princes Akram and Azam were interned at "Belleview." The ex-Maharaja of Nabha was a political prisoner in Kodai for twenty years. During World War I "Loch End"[1] was at first used to house German nationals, while a new camp site was built two miles out from the main settlement, and used in both world wars. The camp has since been converted into the Holiday Homes tourist center. Conversely, Kodai also became the temporary sanctuary for many European refugees from both Nazi Germany and Communist Russia during and after World War II. In 1945 Kodaikanal School staff represented eleven nationalities.

In the surrounding hills the Forestry Department planted blue-gum and wattle to keep the settlement supplied in firewood for cooking and heating requirements as well as to beautify the landscape and prevent soil erosion. They also built rest houses in the early years of the century, each containing a kitchen, dining-room, and several bedrooms, so that hikers and campers could have safe lodgings for the nights. Keys to the houses were available in Kodaikanal and a party of hikers often sent coolies in advance with food and bedding. After the arrival of the motor-car, the huts were in even greater demand as non-trekkers were then also able to stay out in the hills.

The Game Association stocked local streams with rainbow trout and a fishery was opened on the northern edge of the lake. With the automobiles came the necessity for better roads outside the settlement so that these pleasures could be enjoyed by more people. Some of the previous hiking trails were widened for vehicular traffic. The first to be completed was the "Ten-mile Round" linking the Observatory on the northern side of the settlement with the golf course and Pillar Rocks on the southern rim. In 1929 the District Board turned the first sod for the Goschen Road, popularly known as the "Forty-mile Round." It extended the earlier shorter route, linking Poombarai with Mannavanur and Berijam (see Fig. 28). It was completed by 1932. A decade later a second ghat road was started from Berijam to Top Station and Munnar and eventually to Cochin, a total distance of 160 miles. It passes through beautiful countryside, but is an extraordinarily slow dirt road. Until 1970 one needed approximately eleven hours to reach Cochin this way, and the road was impassable after heavy rains.[1]

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[1] Both Belleview and Loch End are European compounds near the lake.

A great municipal concern was the construction of a power house in 1938 and then in 1940 the connection of Kodaikanal to the electrical supply at Pykara in the Nilgiris. Shortly after that, links were also made to Mettur in the north and Pabanasam in the south as alternative supply systems. Gradually private homes were able to install electricity, and a private company built a cinema, the Kodaikanal Talkies, at the foot of the bazaar road, which showed English, Tamil, and Hindi films. The municipality installed a loudspeaker, through which they announced season activities and instructions to holiday-makers, and a siren which whistled out the hour four times a day starting at 6:00 a.m.

The municipality thus played an important role in the development of the hill-station. It endeavored to ensure that the entire community became aware of the various functions of the hill-station. It worked on behalf of the permanent residents, wealthier European as well as poorer Indian groups; it was to some extent involved with seasonal activities of vacationers; it planned to utilize the resources of the hills to satisfy the needs of both permanent residents and seasonal clientele. An Indian was appointed municipal chairman as early as 1921, and since then Indians have alternated with British in the capacities of both chairmen and commissioners, the highest posts which were available. Thus when Independence came and there were no more British leaders, the municipality could continue to function as it always had. It continued to welcome both Europeans and Indians to share the hill-station amenities.

Expansion of Year-Round Activities

Though original contemplations regarding the possibilities of opening up the Palni Hills as English farming colonies did not materialize, there was, nevertheless, a definite year-round European enclave at Kodaikanal which developed steadily through the first half of the twentieth century before Independence. The numbers of Europeans who sought permanent residence in Kodaikanal increased with Kodai's accessibility. As it became easier to travel up from Madras or Madurai, it also became possible to live in Kodai and yet remain involved in certain former activities on the plains. Retirement could be partial at first and even when complete there was no decisive break from former friends such as a return to England would have necessitated.

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[1] In 1970 the road was considerably improved. It is now an all-weather road and its 160 miles of mountainous territory can be driven in eight hours.

Other factors combined with those of easier accessibility to assist the expansion process. During the era between the two world wars and from then on with ever-increasing acceleration, the cost of living in England rose at a far higher rate than old age pensions. In England it became more and more difficult to manage on a pension, whereas with the same financial allowances it was still possible in India to pay servants' salaries. Furthermore, the warmer, sunnier weather was a great inducement for Madras Presidency civil servants to retire in Kodai, especially as social ties were often closer to fellow Kodai pensioners than to strangers in the British Isles. The British remaining in India after the start of both world wars were physically unable to return to the British Isles for several years and their numbers also helped to swell the permanent population at the hill-station.

Though the Indian population also expanded during these years, the hill-station was basically a foreign exclave. The way of life of the permanent residents in their attractive, large compounds inside the basin was enhanced by the support of the Indian residents out of sight in their crowded Indian quarters outside. Europeans had no cause to enter the Indian sector, as daily shopping was done by personal servants and work contracts were arranged with the chief contractor whether he were British or Indian. The leaders of the municipality were Englishmen in the early years. They organized the township according to their British training and set traditions which Indian leaders later followed. As the number of permanent European residents increased, so a large Indian population was needed and could be supported in order to serve this clientele, and generally it seemed that amenities which benefitted the Europeans also, if indirectly, benefitted the Indians. For example, the municipality was organized primarily for the welfare of the Europeans, but it became the means whereby better sanitation and fairer prices were available in the Indian quarter. Schools and medical services were rarely created only for one stratum of inhabitants, even though such institutions were organized by private concerns rather than by the municipality. As already noted, those Indians of wealth and high social standing, who lived inside the basin, were accepted as part of the European enclave.

The Educational System

An indirect role in the expansion of the hill-station was played by Kodai's educational institutions. In the early centuries of British colonies in India there was no question but that children were sent to England when they were old enough to be educated. This spirit predominated to the hill-station era when the feasibility of using the hill-stations for schools, at least for younger children, was considered, so that long-term parting from parents might be delayed until more advanced specialized education began. The British did not, however, establish schools for their children in Kodaikanal, as such schools had already been set up in the Nilgiris.

The first school to be established in Kodaikanal was a Jesuit seminary. With sanction from Rome the construction of a novitiate was commenced in 1894 and a course of philosophy started the following year at Sacred Heart College, Shembaganur. Students remained there approximately eight years and then completed training for the priesthood in Poona or Kurseong. The school was basically organized for Indian students, though others were accepted, and one of the original considerations for its site was that Shembaganur, being approximately 1, 000 feet lower than the La Providence Jesuit property, would be less cold for Indian students. The priests maintained a strong scholastic interest in the local geography of the Palni Hills as well as in more abstract philosophies. They systematically studied the flora, fauna, geology, and archeology of the hills, and they opened their rare museum collections and models to the public on request. It was largely through their efforts that many of the dolmen circles were protected as historical monuments instead of being chopped for stones in the new ghat road.

Two English-medium schools were important during the half-century being considered, Kodaikanal School and Presentation Convent.[1]

The American Madura missionaries had the use of a boarding school in Oberlin, Ohio, but this meant sending their children half a world away and in the early 1890s agitation started for a school in Kodaikanal. Kodaikanal School was opened in 1901 with eight very small classes and a boarding home for thirteen children.[1] Though small, the school was typical of Kodai's international early years in that the children represented both American and British families, working as missionaries and civil servants. At first efforts were made to fulfil curriculum requirements for entry into both British and American universities. As British administrators were slowly being replaced by Indians, and especially since Independence, however, the number of English children attending Kodai School has been negligible, so that the American curriculum only has been followed.

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[1] During the course of the first half of the twentieth century the Catholics, as part of their missionary activities in the hills, set up various schools for Indian children. These schools, though basic to the welfare of the Indian population residing in and around Kodaikanal, were only of indirect concern with regard to European expansion in the hill-station.

At least six of these schools were in the Kodaikanal and Munjikal parishes, and eight more in the Shembaganur parish.

The Munjikal Parish includes not only Munjikal, but most of the other Indian quarters in Kodaikanal, while the Kodaikanal Parish extends northwards to include the hill-village of Vilpatti. The six local schools were: Munjikal Elementary School, 1907; Presentation Convent English School, 1917, and elementary school in 1919; St. John's Elementary School, 1917; St. Theresa's Convent, 1939; the Vilpatti School, 1940.

The Shembaganur Parish is a very extensive one and Catholic schools were established in many of the Upper Palni villages: Vellagavi, Palangi, Puthur, Poombarai, Mannavanur, Adukkam, and Pragasapuram as well as Shembaganur (for these village locations see Figure 28). Some of them closed again in war-time difficulties and re-opened as government schools later. In the past decade several more convents have grown into existence in this parish through the efforts of the Carmelite Nuns who arrived in the area in the mid-1940s. For a complete account of Catholic schools see: Jean Pujo, Catholic Missions in and around Kodaikanal (Shembaganur: mimeographed, 1969).

Once the school was established at Kodaikanal there was little choice for parents of school-children but that they visit the hill-station each year. If they or their missions did not own property in Kodai, they would need to rent a home to be with the children during the holidays. Vacations were arranged so that the long school closure was in winter at a time when students could comfortably live on the plains. In the summer it was expected that parents visited their children at the hill-station.

The school attracted children from American families living in many parts of India[2] and neighboring lands. Though essentially a school for missionaries' children, it accepted any student willing to abide by the rules. Several missions used the school's residential facilities. Other groups established their own boarding homes and sent the children as day-scholars. Whatever the arrangements, the school played its part in assuring that most Americans in South Asia chose Kodaikanal as their hill-station.

Kodai's other permanent English-medium school was Presentation Convent. Rev. Mother Xavier of the Sisters of the Presentation in Madras visited Kodaikanal and recognized the advantages of a school in the hills. She made arrangements to buy property, apparently even before any funds were made available. In 1916 children were brought up from Madras and the foundation stone for a school was laid. It opened the following year with remarkably little furniture or other conveniences. Dormitories were British-style, with large rooms containing many beds and little privacy. Thus costs were minimal, but teaching was of a high caliber and the school grew steadily. Boys are accepted only in the elementary department. In the high school, girls take the Senior Cambridge examinations and, if musical, may also prepare for the Trinity College of Music certificates. The school caters primarily to English, Anglo-Indian, and Indian students.

Also of significance were the non-English European schools and boarding residences. Already during the first world war when German nationals were repatriated or interned, the Swedish Mission took over the work of the Leipzig Lutherans and also their compounds in Kodai. Later they bought properties in the same general location, spreading along the Upper Lake Road. The two communities shared a church, alternating Swedish and German services during hill seasons. The German Lutherans belonged to several small mission groups from different origins in Germany, and they worked in different areas in India. They suffered political hardships during both wars and at least two missions disintegrated. The Breklum Mission bought the Penryn property (a compound adjacent to Loch End, near the lake), which was converted into a boarding home for all German-speaking children. The children attend Kodaikanal School. In the 1920s the Swedes opened a Swedish elementary school at their Solvik property, located on the Highclerc hill. Tenth-grade students either returned direct to Sweden, or in an ever-growing tradition, first graduated from Kodaikanal High School.[1] Because of these school and boarding establishments almost all German and Swedish workers in India visited Kodaikanal hill-station regularly to be with their children, to use mission bungalow facilities, or to visit with fellow countrymen.

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[1] The school rented the Highclerc Hotel property at out of season rates until it could afford to buy the hotel. It is locally still referred to as Highclerc School though its official name became Kodaikanal School.

[2] A similar institution known as Woodstock School, had been established in the Himalayan hill-station at Mussoorie.

There were other European schools of temporary duration which were influential in their day. One such was the Montessori School. Maria Montessori was interned in Kodai for two years in World War II. During this time she ran a school for young children of all nationalities, and also organized a training course for teachers to which two successive groups of students from all parts of India were able to take the opportunity to study under her guidance.

The Permanent Residents

The permanent residents themselves, as well as hospital, dormitories, and schools, also influenced the growth of the seasonal population. They became leaders of the various clubs, which were permanent associations, and played a great role in retirement years. The clubs also became the chief sources of entertainment and thus the main attraction for seasonal visitors, with their carefully planned seasonal activities. The clubs did much to influence the choice of Kodaikanal as a hill-station for those who enjoyed an active social life, during the same years that the Nilgiri hill-stations were attracting those who wanted little else but rest and quiet.

In another small way also, the permanent residents assisted in spreading the influence of Kodai on the plains. It became popular through the colonial years for baskets of fresh vegetables and fruits to be despatched from Kodai to European residences on the plains, when travel facilities had made it possible for them to arrive in a satisfactory condition. Such arrangements were frequently made through the permanent residents.

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[1] In 1970 the Swedes sold the Solvik property to Kodaikanal School and moved to their completed new school and boarding at the Swedish Settlement on the Upper Lake Road

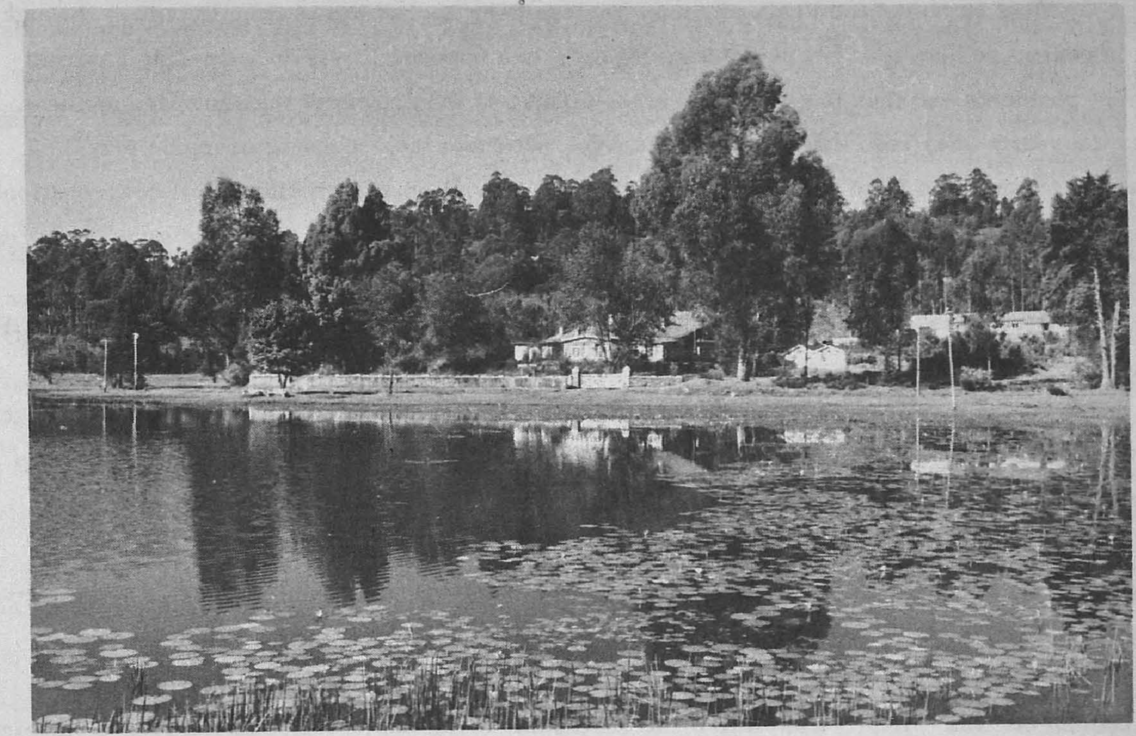

Fig. 34.--A spacious European compound on the lake shore. The main bungalow, is visible in the center of the compound. Some additional buildings and servants quarters have been built, as seen on the right.

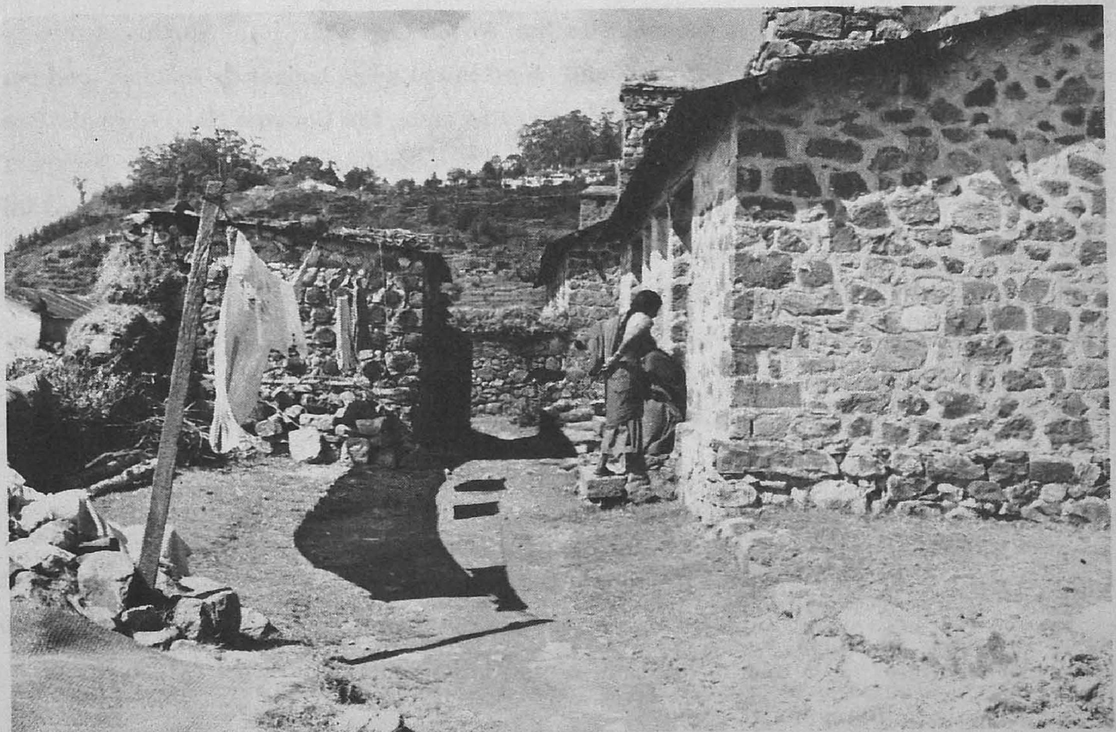

Fig. 35.--An Indian home at Anandagiri. Notice the comparatively small houses, narrow streets, and crowded conditions even at the edge of the terraced fields along the slopes of the southern rim of Kodaikanal basin.

Just as no detailed records seem to have been kept of the seasonal visitors through the years, so also it is not possible to differentiate between Indian and non-Indian permanent residents and thus to give an accurate picture of the growth of the European enclave. In the years when religious belief was incorporated into the census returns one may assume that apart from the small protestant and large Roman Catholic Tamil congregations in Kodaikanal, the rest of the Christians were Europeans. This then, would give an approximate European population of 1,492 in 1910; 2,415 in 1920; 3,653 in 1930; and 4,343 in 1940. A reasonable estimate for 1940 would be that 35 per cent of the total permanent hill-station residents were Europeans.

At the same time that Kodaikanal was developing primarily as a foreign exclave, it nevertheless also had a growing Indian hill-station clientele. Just as Kodai became more and more accessible to Europeans, so it also became equally accessible to wealthy and middle-class Indians. Not only outside the basin rim in the Indian bazaar quarters, but also inside the basin itself, areas of Indian-owned properties became gradually more frequent. Between 1920 and 1945 at least a dozen large Indian settlements arose, some of them new properties, others originally British or American ones. The first of the new settlements was "Bliss Villa" which extended southwards below the southern rim of Kodaikanal Basin, starting near the Union Church. East of the lake considerable land was bought by Indians: the Anandagiri estate, and several groups of compounds at Srinivasapuram and Turnerpuram east of the Munjikal bazaar; Pakiapuram near Glen Falls; and Pambarpuram on the site of the former Pambar Woods (see Fig. 36). Northeastwards, many of the houses in the original Tinnevelly Settlement were bought by Indians, and perhaps the largest numbers of new Indian homes were along the Convent Road towards Presentation Convent, with many extensions and branches, and eastwards towards Prospect Point where a Hindu temple was erected. Also eastwards, Chettiar Road was named for the Chettiar planters of Panaikadu, a village of the Lower Palnis, who were able to own summer houses in Kodaikanal. A second park, Chettiar Park, was set up to beautify this newer suburb. The British had set an example in the hill-station idea, but increasingly Indians were willing and able to participate in all its aspects.

Expansion of Seasonal Activities

Seasonal activities during the years under consideration continued in the traditions laid down at the start of the hill-station era and modified in the 1890s when the accelerated expansion first began. They were, therefore, geared primarily to the amusement of the European clientele. It is thus of interest to discover when, and to what extent, Indian groups fitted into this colonial enclave.

Individual and group hunting, fishing, and picnic parties continued as before, motorcars replacing horses and bicycles. Women's clothing became adequate for sports so that family camping and hiking became possible, particularly with the aid of cars and of overnight sojourns at forest rest houses. In the 1930s and until petrol rationing during the war, these bungalows were booked far in advance of the season. Tennis, golf, and boating remained the most popular outdoor sports. All three were usually connected with club life and in these years they appealed to both sexes and to all nationalities.

Social life changed largely according to the prevalent European customs. Until the 1890s formal calls had been made on all other residents. Even when this became a practical impossibility by reason of expanded population, they continued in principle though they were limited to more personal acquaintances. At the end of the Victorian era, however, the custom gradually died. Replacing formal calls in the 1920s were the rather large private tea-and-tennis parties. By the 1930s these too were out of fashion, being replaced by small morning coffee or afternoon tea visitations, and by the evening contract bridge parties. Such social responsibilities rarely included other levels in the social strata so that visiting became more personal. The more formal aspects of social life were continued through club entertainments.

The first club to open was the English Club. It continued as the chief club for the British civil servants after its enlargements. It was long the center for dances, concerts, amateur theatricals, and formal social affairs. The English Club offered considerable opportunities for entertainment to its own members, who from the start included wealthy English-speaking Indian elite, in the form of competitions, a lending library, and the use of its rooms and facilities. It did not, however, plan seasonal activities for the community as a whole. Such work was done by the Kodaikanal Missionary Union.

Already in its earliest days, when the English Club was still known as the Kodaikanal Club, it had made efforts to construct a golf course. But there had been insufficient planning and in 1895 a group of golf enthusiasts met to discuss better locations for the links. They organized a Golf Club, laid out the course, and erected a hut for equipment near Pillar Rocks. Since then much work has been completed on the links to turn them into an extremely good 18-hole course. Until after Independence the Golf Club executive were almost exclusively British, though through the years more and more Indians were able to afford membership. The missionary groups were largely excluded because of the high costs of fees.

There were boats on the lake from the time of its formation, and several compounds erected their private boat-houses along its shores. However, the cost of buying boats and transporting them to Kodai was more than the majority of vacationers could afford and the Boat Club was one of the early clubs to be organized. It started more than a decade before the new century. A minute of 1893 showed the secretary authorized to buy: "two sculling skiffs like the 'Gadfly,' one Thames skiff from Salter and Co., Calicut, and Mrs. Carter's punt for Rs. 40." Through the years the club bought up most of the private boats at Kodai as well as a considerable number of new ones. Boat-houses were enlarged as the club became more popular, and after three fire mishaps a fireproofed club-house was built. To join the Boat Club required no personal equipment and few skills. Membership fees were not high and the Boat Club grew faster than the Golf Club. It proved a great attraction particularly to Indian visitors, and many of its executive members had been Indians in the two decades prior to Independence, the earliest Indian name of the committee being that of the Dorairaja in 1897. An annual moonlight fête, forerunner of today's decorative daylight regatta, had already become traditional before the turn of the twentieth century. The club also organized a permanent ferry system for people wishing to cross the lake.

Perhaps the most influential club throughout Kodai's history has been the K. M. U. (Kodaikanal Missionary Union). By the early years of the twentieth century, when seasonal visitors began to arrive in Kodai by the thousands, there was a tendency among the missionary groups to form small denominational sects. The American Congregationalists, always concerned about hill-station camaraderie, felt it was their responsibility to entice these groups into a larger association. Subscriptions for a club-house on Highclerc hill were taken in the early 1920s, so the school's tennis courts and gymnasium could be used for its seasonal activities. Whereas other clubs had seasonal memberships of two to three hundred by the time of India's Independence, the K. M. U. 's membership had long since been more than a thousand.

The K. M. U. has shown interest in all levels of the hill-station community and of all phases of hill-season activities, factors which probably did much to enhance its popularity. Proceeds of activities very often went towards an improvement in the living conditions of Kodai's poorest servant class. The club thus expressed a social conscience not as evident in others, and it set out to fulfil some of the educational and religious needs of the visiting clientele, as well as those of health and recreation. Several later associations sprang from a discussion of needs during a session at the K. M. U.

One of the greatest problems for the European academician isolated from his homeland, was how to keep abreast the recent discoveries in his field. In two specific disciplines the K. M. U. attempted a type of inservice training during the hill-season. Newly arrived doctors were asked to contribute to an annual Medical Conference. The Kodaikanal Conference organized annual discussions of contemporary religious affairs which included both theoretical concepts and practical missionwork problems. Struggles for ecumenicity were evident in Kodaikanal many years before they became of general interest in the West. The purpose of the annual Kodaikanal Convention was to experience a deepening of spiritual life, to escape momentarily from the problems of everyday life in order to reconsider one's own spiritual values. Though of vital service to Europeans, this type of program was generally of little interest to the Indian clientele, however, as few of them were Christians and fewer were doctors.

Different types of projects activated by the K.M.U. were the May Sales. These were originated in a small way by lady missionaries who taught pillow lace and fine embroidery to poor Christian women on the plains to help them earn a living, and then sold the products in Kodaikanal. As workmanship was usually excellent, these goods found an extremely favorable market at the hill-station. Often the bulk of a year's work was sold in the K.M.U. As the years passed, industrial missions widened their scope and regular visitors to Kodai often waited until the season to purchase household supplies. An Industrial Missionary Association was formed in the 1940s and a traditional two-day sale organized in Highclerc gymnasium. Thousands of shoppers visited the sales and orders were placed for delivery by mail later in the year.

Another type of sale also organized through the K.M.U. was the Highclerc Sale. With a modest start in 1906, it became an ever-growing annual affair which by the late 1940s netted thousands of rupees. Queues formed hours before opening times by mothers hoping for underwear, hosiery, ready-made clothes, kitchen utensils, toys, and a great variety of dime-store articles normally unobtainable in India. During the years of war and post-Independence restrictions on foreign imports, such products became unavailable and were supplemented by second-hand clothing and toys. Though sales were organized primarily for Europeans, there were many items of interest also to Indian shoppers, rich and poor alike. It was often Indian servants who headed the waiting lines for entry to a sale in the hopes of being able to purchase a discarded blanket, sweater, or undershirt which they needed in the cool hill-station altitude but could not afford to buy in the shops.

The K.M.U. also sponsored most of the large-scale music, art, and drama productions at Kodaikanal during these expansion years. Particularly important to foreigners living in South Asia and being closely involved in Indian culture, was the opportunity to enjoy their own cultural heritage and share these emotions with fellow Westerners. Such emotional relaxation was probably as important to health and well-being as were the purely physical aspects of cool temperatures and sports activities. It formed an important phase of hill-station life. It brought an urban sophistication into the hill-station which could counteract the effects of much of the year spent in more primitive surroundings.

Concerts were held in Kodaikanal from the earliest days. The obvious difficulties of transporting pianos up the Coolie Ghat did not prevent this from frequently taking place. All compounds and clubs organized their own musical events. The K.M.U., often in conjunction with Kodaikanal School, supported the large-scale recitals, which drew large numbers of the holiday-makers into the gymnasium to enjoy a Western concert. It sponsored two large groups which produced annual performances. These were the Kodaikanal Choral Union and the Gilbert and Sullivan Operetta groups. Both required large numbers of participants willing to give considerable time during the month of compressed rehearsals.

Activities were usually planned a year in advance so that directors and soloists could prepare on the plains.

Straight drama had a later start, primarily because many missionaries in the early years frowned upon theatrical performances. The English Club put on short revues and farces but it took until 1924, at an inter-club tennis meeting, before the first full-length play was produced by members of both clubs. As the Drama Association grew in strength and confidence its performances became incorporated into the regular K. M. U. season programs. There has probably never been a play produced in Kodai without both American and British voices. Occasionally also, Indian English is heard with them on the stage.

Art, of course, was produced without organization, but it was through the auspices of the K. M. U. that the gymnasium was opened for a two-day painting exhibition for the first time in 1928. Not only were Kodai artists on display, but work was invited from Indian artists from different parts of the country. Not only were local Indians encouraged to give expression to their own art forms, but also Europeans were made awâre of the modern Indian School of Art.

From 1932 onwards the Entertainment Committee of the K. M. U. organized the entire season program of drama and musical performances to be given the following year before the current season had expired and people left the hills. All talent and time were donated to a Community Chest Entertainments Fund, so-called because the profits were given to the Van Allen Hospital, Highclerc School, a crêche for Indian babies whose mothers needed to work, the mobile village medical dispensary unit, the Kodaikanal branch of the Indian Red Cross, and various similar projects or institutions which served the community.

In these aesthetic forms of cultural expression the Indian population played a varied role. A few Western-educated Indians joined in the musical and dramatic events. Occasionally an Indian troupe was invited to perform. Generally, however, Indian participation was limited and yet their obvious enjoyment was expressed by the regularity with which those who were economically able bought season tickets for the programs.

Perhaps the most interesting development in Kodaikanal's club life was the organization of the Indian Club. The early Indian hill-station clientele had certainly been welcomed to the existing clubs. However, when Indians began to come to the hill-station in large numbers after the completion of the Ghat Road, and the Indian settlements grew extensive, large groups of Indians appeared in Kodai who were neither rich hill-station clientele, nor yet of the lowly servant classes. They were unable to afford existing club fees; not interested in reading English literature or playing bridge and golf; nor perhaps really welcome in droves as members of existing clubs. Therefore they formed their own club, opened in 1915 by Sir T. V. Seshagiri Iyer of Madras. The club-house was at first small, but was enlarged as the club grew and owned a tennis court. Membership fees included special concessions for use of boats on the lake. They arranged for Indian performers, such as the Kathikali Dancers to come to Kodai. The club was, thus, an interesting example of the adaptation of the European hill-station principle to suit the needs of Indians who could not afford to use the European facilities.

The spirit of comradeship which helped to make Kodaikanal different from British hill-stations in the Himalayas, continued to be evidenced throughout the first half of the twentieth century. Efforts were consistently put forth to resolve serious differences and create an example of tolerance to people of all religions, ethnic groups, and socio-economic levels. Just as early problems of religious convictions between British civil servants and American missionaries had been satisfactorily resolved in matters such as a communal church and club-house, so later frictions were also kept under control. Competition between the two major clubs, the English Club and the K.M.U., was channelled towards a friendly basis by additional annual sports competitions. In this century the old-established British Commonwealth (formerly Empire) versus America tennis championships were played off on Empire Day at the English Club, while a new annual tournament in the form of the English Club versus the K.M.U. was played on some date in May other than 24th. Both occasions called for extensive formal teas at the respective club-houses, which became the most crowded functions of the season and did much to restore mutual respect and confidence.

Kodaikanal could easily have become an extension of the manifold petty Christian religious squabbles, which unfortunately were frequent on the plains. The debates at the annual Conference and Convention, to which Indian Christians were also regularly invited, did much to alleviate such problems. All groups joined together to sponsor a Missionary Language School whose headquarters for many years remained in Kodaikanal. Wednesday afternoons were set aside at the K.M.U. for formal teas. Each week these teas were prepared by a different large, or combined group of small denominations, with the express intent of stimulating friendship with members of different groups. These teas became so popular that two or three sittings were normally necessary. Meanwhile the smaller rooms and verandahs of the club-house were rented out to the Industrial Sales Committee.

As well as concern for peaceful relations between American and British and between missionary and non-missionary, or among diverse missionary groups, there was also considerable thought for good relationships between European and Indian. A Kodaikanal Fellowship began in 1927 as a branch of the International Fellowship, with the purpose of bringing together all types of residents of Kodaikanal. Meetings were held at both K.M.U. and the Indian Club and included lectures on topics of general and cultural interest. A European or Indian style of refreshments preceded the talks and discussions, according to which group was host. Topics included series on the great Indian Epics and Indus Valley Civilization discoveries.

From this historical overview of the evolution and early development of Kodaikanal as a specific example of an Indian hill-station, it is clear that it came into existence to satisfy the needs--actual as well as perceived--of British civil servants and American missionaries working in India. The primary factor which governed its location was height above sea level. From a very small center with a specific single-purpose function of health recuperation, and with only few local connections in the Madurai District, giving it a small limited hinterland, it evolved into a sizeable multi-functional type of settlement with a complex association of activities and a series of overlapping hinterlands. It became a nexus for India-wide relations and connections, some of which already in its colonial days spread beyond the shores of India. It included Indians of all types as well as Europeans.

CHAPTER V

CHANGING FUNCTIONS OF THE HILL-STATION SINCE INDEPENDENCE

The processes of Indianization and modernization in Kodaikanal started considerably before Independence, but have accelerated in recent years to make possible observation of significant and radical modifications in the hill-station's functions. Lerner and Srinivas in their analyses of modernization in India emphasize the roles of increasing urbanization, improved communications, and greater mobility.[1] All three have had a marked impact on the post-Independence development of Kodaikanal. In the processes of Indianization and modernization some activities have been continued, others radically expanded, and new activities have been established.

Continuation of European-instituted traditions in an Indianized form, is observed, for example, in the new procedure regarding seasonal activities. Such activities in the colonial era were the responsibility of private clubs; with Indianization they became government sponsored. Sometimes expansion has implied a continuity of earlier functions with more Indians participating on a larger scale, as observed in the activities of the Boat, Golf, and English Clubs.

In other instances expansion has involved radical change rather than continuity, such as in the development of short tourist excursions to the hill-station. Kodaikanal has become one event on a general sight-seeing tour of Tamilnad or South India.

New activities have also been established since Independence, as evidenced in the development of new economic enterprises. Though Kodaikanal still remains primarily a hill-station for seasonal recreation, it is now also supported by large-scale agricultural activities in its function as an assembling and distributing center.

The trend towards urbanization in India has also had an impact on the hill-station. It is the urban population which shows the greatest need for vacations in the hills and which has the means to satisfy such needs, whether for long periods or short day-trips. The seasonal activity programs are depending more and more frequently on urban-based performers from the plains. It is largely the urbanites who can afford to send their children to English-medium hill-station schools. A new association has been forged between the hill-station and urban areas through the bulk shipments of hill-produce to cities on the plains.

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[1] Daniel Lerner, The Passing Traditional Society (Glencoe: Free Press, 1958), pp. 45-49; and M. N. Srinivas, Social Change in Modern India (Berkeley: University of California Press, 1969), pp. 46-88.

The accelerated expansion of the hill-station since Independence has primarily come about because of greater accessibility, which in turn is largely the result of improved transportation and other communication systems. Greater accessibility, together with urbanization, has encouraged greater social as well as physical mobility, as increasing numbers of Indians today are enjoying the amenities of the hill-station.

The impact of Indianization and modernization is considered in this chapter through a study of the changes in permanent and seasonal clientele and activities; in ranges of hinterland; and in economic functions.

Changes in Permanent Residents

The most noticeable change at Kodaikanal after Independence probably was the withdrawal of permanent European residents. However, this was no sudden or violent happening. It represented a continuance of a trend which started at the close of World War II.

The hill-stations were basically recreational, not political, resorts, and as such they were largely unaffected by the politics of Independence. Unlike many of the Indonesian stations, they did not become centers of resistance and fighting. Had the actual day of Independence come in May when the center was crowded, perhaps some unusual activity might have occurred; by mid-August there were no large holiday groups in Kodaikanal, and Independence was peaceful.

Because of Independence, some British who had planned to retire in Kodai decided instead to return to England rather than live in a now alien land. Others, however, especially the elderly and those whose financial position was too precarious for retirement in Europe, preferred to stay. There was thus no mass exodus and, except for a noticeable difference in the ratio of Europeans to Indians, there was no immediate change in the hill-station routine.

Kodai's property was privately owned almost from the beginning of its history. The earliest owners were American, British, and Indian, a situation which still prevails today. What has changed is the proportion of land owned by each. In its early years the American Madura Mission owned two major sections of land, one along the southern rim from St. Peter's to beyond the Union Church, a distance of approximately half a mile at varying widths, and a somewhat smaller section nearer the lake including the site of the old church and cemetery. A few compounds were Indian-owned. The rest of the occupied territory belonged to individual British civil servants. Through the years more Indians bought land as did several other American and some British missions, but the largest property buyers were retiring British.

Since Independence the great majority of buyers have been Indian. Figure 36 shows the relatively small amount of property currently occupied by foreign groups, including the Swedes and other Europeans together with the Americans and the British. In several instances mission properties have been legally made over to the Indian church though they are still predominantly used by foreign missionaries.[1] They have been classified here according to the user rather than the legal owner where these are not identical. Though such a classification is still justifiable according to present conditions, it is not expected to remain applicable a decade or two from now. Kodaikanal has increasingly become the location for regional Christian committee meetings, and such functions are being attended by an ever-growing percentage of Indian Christian leaders. These Indians are learning to enjoy the cooler hill-station atmosphere, and as they accept the erstwhile missionaries' responsibilities, they also inherit the hill-station properties. One must assume that the mission compounds will soon become Indian in reality as many of them are already Indian by law. Radical changes are thus approaching.

Not only were existing properties steadily bought up by Indians, but most of the new buildings were erected by them. These included some of the largest and most elegant homes in Kodai. Some are houses for permanent residents; more often they are primarily for seasonal occupation. Many of them were built by individual families, not only by residents of Madras, who claim that the cost of living in Kodaikanal is somewhat lower than that of Ootacamund, but also by people whose homes were in Bombay and Calcutta, who maintain they could not afford to retire in nearer hill-stations because prices of land are considerably higher there than in the South. The presence of such people from distant areas will also encourage a greater use of Kodai's hill-station facilities by relatives and friends from their home states. Already a tentative taxi service has been arranged between Kodaikanal and its nearest airport at Madurai, 78 miles away. There is, thus, not only the subtle change of a greater proportion of Indian-owned houses, but a radical change in that the prospects for the future range of hinterland of Kodaikanal have become more widespread. As air travel increases Kodai's accessibility, it will again increase its hinterland.

Not all the new buildings are for private homes. One of the splendid large new houses on the Middle Lake Road west of the lake was erected by a Madras film company. For Indian business firms to own hill-station property for the use of some of their employ-

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[1] For example: former British S.P.G. (Society for the Propagation of the Gospel), S.P.C.K. (Society for the Propagation of Christian Knowledge), C.M.S. (Christian Missionary Society), and L.M.S. (London Missionary Society) properties, together with some British and non-British Congregational, Methodist, Presbyterian, and Reformed mission compounds have become the official property of the Church of South India; M.E.L.I.M. (Missouri Evangelical Lutheran India Mission) property is legally owned by the I.E.L.C. (Indian Evangelical Lutheran Church).

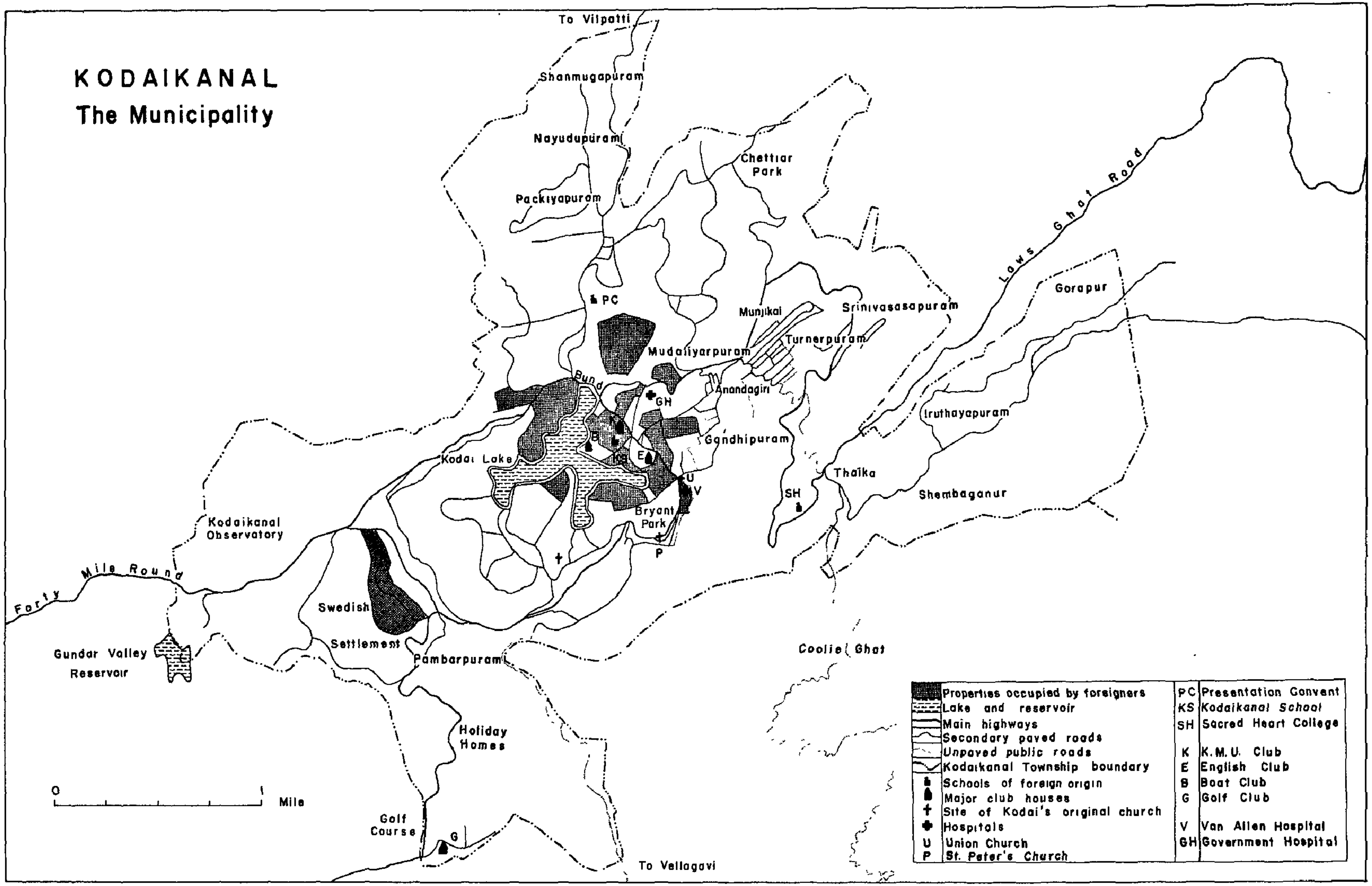
KODAIKANAL
The Municipality
To Vilpatti
Shanmugapuram
Nayudupuram
Packiyapuram
Chettiar Park
PC
Munjikai
Srinivasasapuram
Turnerpuram
Mudaliyarpuram
Bund
GH
Anandagiri
Gandhipuram
Kodai Lake
B
E
U
V
Bryant Park
P
SH
Thaika
Shembaganur
Iruthayapuram
Gorapur
Laws Ghat Road
Kodaikanal Observatory
Forty Mile Round
Gundar Valley Reservoir
Swedish Settlement
Pambarpuram
Holiday Homes
Golf Course
G
To Vellagavi
Coolie Ghat
0
1
Mile
Properties occupied by foreigners
Lake and reservoir
Main highways
Secondary paved roads
Unpaved public roads
Kodaikanal Township boundary
Schools of foreign origin
Major club houses
Site of Kodai's original church
Hospitals
U Union Church
P St. Peter's Church
PC Presentation Convent
KS Kodaikanal School
SH Sacred Heart College
K K.M.U. Club
E English Club
B Boat Club
G Golf Club
V Van Allen Hospital
GH Government Hospital

Fig. 36

ees is also a radical change in the hill-station policy and possibly one which might become more widespread in the future.[1]

Though the total number of permanent residents in Kodaikanal between 1940 and 1950 (i.e. including the period of World War II and until three years after Independence) rose from 9,724 to 10,941, the actual numbers of Europeans dropped, implying a considerable change in the ratio of Europeans to Indians. There seem to be no official records of exactly how many Europeans left, though the census literature claimed:

> Kodaikanal Taluk has shown an increase of 19.4 per cent. The extension of large-scale plantain cultivation which is a speciality in this taluk on the hills has attracted immigrants from the plains, though the European population in Kodaikanal has gone down appreciably.[2]

No suggestion was given regarding how many Europeans were affected, but in a negative way it is an indication that the hill-station's days as a European enclave were numbered after Independence.

Between 1950 and 1960, Kodai's permanent population increased by 17.4 per cent, reaching a total of 12,860 residents. It is to be assumed that almost the entire increase was among the Indian residents. The 1970 census results show a further increase to 16,481, reducing the proportion of Europeans to a nominal figure.

The few British permanent residents remaining now are on the whole the elderly whose pensions were organized for an earlier cost of living standard than the present. Several of them have visited the British Isles since the war and for many reasons--monetary, weather, familiarity--prefer to live in Kodai. There are some newly retireds, however, who not wishing to live under present-day circumstances in Britain, have bought property in Kodai and intend to make it their home. Together they keep up some of the social life and traditions of Kodai's early years.

The European Schools

One might, in 1971, be tempted to claim that because the European-originated schools in Kodai have thus far continued with a steady expansion program since Independence, this process is likely to be kept up. However, radical change is coming to some of the schools even though it may not be immediately apparent. The change will depend on the degree of Indianization which has taken place among the schools.

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[1] The practice of large business firms renting property in Kodaikanal on behalf of their workers, or sending them on day-tours to Kodai is also being initiated. Among the visitors interviewed at the 1971 hill-season were employees from a bus workshop who were sent on a tour from Madurai, and from a cement factory who were being given a week's holiday in Kodai by their employers. Both these ventures had started this year.

[2] Census of India 1951, Vol. III: Madras and Coorg, Part I (Madras: Superintendent of Government Press, 1952), pp. 22-23.

At Presentation Convent the increase in number of students has been steady, from 141 in 1947 to 237 in 1969. High teaching standards and comparatively low costs have made the school attractive to Eurasians as well as British and Indians desiring an English-language school system. After Independence Anglo-Indians were given a choice of citizenship. Some elected British status, others Indian. As the Convent numbers have increased through the years since Independence, the ratio of blue-eyed blonds to the dark-eyed brunettes has decreased. Many Convent parents belong to Indian communities in Southeast Asian and African countries, and some have chosen to adopt the nationality of their new homes. An analysis of the school enrolment in 1969 showed 71 per cent Indian and 21 per cent British forming the basis. The remaining 8 per cent included approximately 3 per cent Tanzanian, 2 per cent Malaysian, 2 per cent Sinhalese, and 1 per cent Canadian. The diminishing numbers of Europeans residing in South India will probably make no further noticeable difference to the school situation in Kodai.

The American and Swedish schools on the other hand, are considerably affected by the foreign population, who provide the nucleus of students for their schools. It has been difficult, particularly for American and non-British European missionaries, to obtain visas to work in India since the early 1950s. Rather than evangelists, most of the missionaries have been specialists in some branch of medical, educational, agricultural, or industrial missions during these last two decades. Contrary to expectation, nevertheless, the enrolment at Kodai School did not decrease. Instead it rose steadily from 139 in 1947 to 372 (excluding the Kindergarten) in 1969. Some of the grades became too large to be taught in one classroom by one teacher, and the high school particularly expanded with an ever-increasing proportion of non-missionary students.[1] More electives were offered, and more classroom space was required. Temporary arrangements were made to use rooms in the K. M. U. and chapel, and in 1968 a building engineer arrived as a member of the school staff so that sound planning could be made for a physical expansion of the school plant. Before work on the main structure commenced, however, there came a somewhat large and rather sudden drop in enrolment for the new school year starting June, 1969.[2] Building operations were therefore held in abeyance. If the enrolments were to continue to decline in this way over a period of three to four years the school would no longer be a viable unit. An analysis of the nationalities of its students exposes the dependence of the school on India's foreign population. Americans formed 76 per cent of the total student body in 1969, Canadians 11 per cent, Indians 3 per cent, Germans 2.7 per cent, and British 2.5 per cent. The remaining 4.8 per cent were made up of a small number of students from Sweden, Czechoslovakia, Switzerland, Norway, Holland, and Yugoslavia in Europe, Thailand, Taiwan, Singapore, and Ceylon in Asia. With the enrolment decrease, considerable attention was focused on the question of the school's future. Two basically different programs were considered, an amalgamation with Woodstock School in Mussoorie, which was facing an identical predicament, and an attempt to increase the 3 per cent indigenous student body at a fast enough rate to ensure the school's continuance. Either solution would be difficult to implement, and it has become clear that the status of the foreign schools in Kodai is precarious.[1]

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[1] The ratio of missionary to non-missionary students dropped during the years since Independence from approximately 4-1 to 3-1.

[2] This initial drop was of more than 50 students and it seemed indicative of the trend for the immediate future, as several long-standing families who had worked in Assam and Orissa were refused re-entry visas, and replacements for them were not forthcoming. One small private boarding home, that organized by S. I. L. (Summer Institute of Linguistics) in Kodai, was closed as this entire group had been asked to leave India.

Changes in Municipality Functions

Changes in the municipality are often immediately noticeable to seasonal visitors because of the current use of loudspeakers by members of the town council. Pre-election campaign speeches are broadcast in this way, and commentaries are given throughout the season on events and activities. Such changes, however, are to a large extent superficial. The Indianization process with regard to the municipality has represented a steady continuation of early established procedures, with modifications and reforms being introduced from time to time. These have included two considerable reorganizations. The Kodaikanal Municipality was reorganized in November, 1960, when a committee of eleven members, eight official and three non-official, were appointed by the government as the Township Committee, Kodaikanal. To date, the chairman of the Township Committee has been the Collector of Madurai, a new chairman appearing in the form of a new collector.

Five months later, in April, 1961, the entire district was reorganized, the taluk becoming the Kodaikanal Panchayat Union and comprising 15 village panchayats (local councils) and Kodaikanal town panchayat. The Panchayat Union Council consists of 21 members who endeavor to implement development programs for the entire district.

All local town governments are faced with responsibilities for the maintenance of order and the encouragement of beneficial developments within their constituencies. The newly created Township Committee at Kodaikanal has recognized the importance of the hill-season. This is an expansion which represents a radical change rather than a continuation of pre-Independence municipal duties. As noted in Chapter III, the Indian government has become aware of the remunerative effects of tourism to hill-stations and holiday resorts and rather than leave the entertainment of visitors to chance, the government has encouraged the establishment of planned activities and other assistance to holiday-makers. The Township Committee at Kodaikanal therefore formed a Season Committee whose sole responsibility was to plan stimulating programs for the summer visitors. Inaugurated in the late 1960s, these programs have included a great variety of activities to appeal to many different interests. They have taken the form of a highly concentrated two-week Summer Festival in the latter half of May. While the British left planning of seasonal programs entirely in the hands of individuals, the Indians have made it a government responsibility to cater to the guests. The Europeans, yearning for the type of sophisticated urban atmosphere they had left behind in their homelands, endeavored to resurrect it by creating their own cultural programs. The Indians have understood the value of a sophisticated cultural atmosphere at the hill-station, and by organizing at a governmental level, have been able to import artists up to the hills from nearby urban centers. This is more than a mere mimic of former colonial attitudes which may now have prestige value. It shows the distinct trend of the modern Indian hill-station towards the process of urbanization which is a part of the Indianization of hill-stations. As seen later in the analysis of hill-station visitors, both the long-term Indian seasonal visitor to the hill-station today, and the short-term visitor who stays at least a week or two, and who thus has time to enjoy the hill-season activity program, is most likely to be an urbanite. He thus appreciates the urban-type program as much as did the Englishman in his day.

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[1] The Swedish School had put their new building program into effect some months before the decline, and moved out into an enlarged new unit at the Swedish Settlement in 1970, selling their Solvig property to Kodai School. The small Lutheran School at Loch End amalgamated with Kodai School in 1969, as its numbers declined to the extent that its usefulness was questionable.

The new program is in no way in competition with the older European activities. The great influx of Indian holiday-makers to Kodai each season makes it impossible for more than a small proportion of them to visit the shows produced in the Kodai School gymnasium. Those who are interested are welcomed.[1] At the same time Europeans are welcomed as participants at the Indian activities. Kodai's spirit of camaraderie is still noticeable in that Europeans are frequently invited to be officials in the inauguration or judging of an Indian seasonal activity; occasionally the venue of a municipal-planned event is on a European compound; a European has been a member of the Season Committee since its formation.

The Collector of Madurai in his dual role as District Collector and Chairman of the Township Committee at Kodaikanal, is also most concerned that the expansion of Kodai as a tourist resort should not destroy the natural beauty and aesthetic value of the hills. Plans are being considered for a Consultant Committee, a Survey Team, and a Master Plan for the development of the hill-station, so that haphazard building, squatter encroachment, deforestation, and land erosion, shall not take place. Among the future plans are the erection of a large, attractive municipal townhall and auditorium, a Gymkana Race Course, a helicopter service, several new hotels, an information center for tourists, and a new public library.[1]

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[1] In 1968, for instance, an extra performance of Sound of Music was given on a Sunday afternoon, as this program was so popular also among Indian visitors that tickets to all advertised performances had been sold out in advance.

Current Seasonal Clientele

The process of Indianization with regard to hill-season clientele immediately before and after Independence was one of steady expansion, which represented continuity. In the years following Independence one could not easily detect differences in the seasonal hill-station clientele from the years before Independence. Although after the war and again after Independence more European permanent residents left Kodai than at any other time in its history, the actual numbers that departed were not high enough to make an appreciable difference during the hill-season months. Among an estimated season population of 18,000 in 1950, even a few hundred Europeans would hardly have been missed. Furthermore, there was probably little actual difference in the total numbers of Europeans at the hill-station in season times. As British residents left Kodai they were replaced by an almost simultaneous increase of European (predominantly American) missionaries, businessmen, and foreign-service officials who arrived in India after stabilization of political and economic conditions since World War II. The enrolment at Kodai School testifies to this increase.[2] The major differences among hill-season clientele were found in a steady rise in total numbers of visitors and the gradual decrease in the proportion of Europeans to Indians among them. Twenty-three years after Independence the Indianization process has become quite obvious.

The seasonal visitors now number tens of thousands, and hotels and recreational areas are crowded throughout the season. The ratio of Indian visitors to European is perhaps as high as thirty-five to one. As no complete official records of visitors are kept, efforts were made in this survey to count them. Attempts were made to record the arrival of cars and buses with their respective passengers during the hill-season months, April, May, and June, in 1970 and to check the results with the records of registrations at hotels and guest houses, the police department, schools, and private compounds.

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[1] In 1969 a group of Kodai residents formed the Kodaikanal Conservation Council, and through it expressed concern about the destruction of the hill station's natural beauty. They suggested alternative sites for several of the planned buildings and pointed out the need for more careful planning. The Collector has incorporated many of these suggestions into his report of September, 1971, and they are being discussed at conferences with local and state officials, and the Minister for Tourism. See: K. Lakshmikanthan Bharathi, Project Report for the Improvement of Kodaikanal Township and Kodai Hills (Madurai: mimeographed, 1971).

[2] In the Missouri Evangelical Lutheran India Mission, for example, 17 new missionary families had by 1950 joined the ranks of the 18 families who had remained during the war years. See: Herbert M. Zorn, Much Cause for Joy--and Some for Learning (Malappuram, Kerala: Missouri Evangelical Lutheran India Mission, 1970), p. 44.

Survey of Arrivals by Car and Bus

A count was taken of all visitors who arrived in Kodaikanal by private automobiles during the three-month hill season of 1970, from the beginning of April until the end of June.

As the journey to Kodaikanal from the nearest towns on the plains can be driven in two to three hours, it is easy to plan arrival times conveniently. It was discovered that the majority of cars arrived at the hill-station in the morning hours approximately between 9:00 a.m. and noon, or in the evening hours between 3:00 p.m. and dusk. There was a distinct lull at noon, and comparatively few cars arrived during the night.[1]

The count showed that in the 1970 hill season, at least 12,365 visitors arrived by private cars.[2] The entire month of May forms the peak of the season, with approximately four times as many visitors as April and June together (Table 3).

TABLE 3[a]

TOTAL MONTHLY ARRIVAL OF PRIVATE CARS AND PASSENGERS IN KODAIKANAL FROM APRIL TO JUNE, 1970

Month	Private Cars	Passengers
April	364	1,422
May	2,008	9,858
June	290	1,085
Total	2,662	12,365

[a] Source: personal survey.

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[1] Because of the problems involved in counting passengers in cars after dark, the night vigil was abandoned after a few nights. Some cars were thus missed, but passengers in cars which arrived during the day were counted with reasonable accuracy.

[2] It is possible that some of Kodai's permanent population returning home from an excursion to the plains have inadvertently been included in the total count. Nevertheless the count is more likely to err in terms of under-estimation because of the possibility of visitor arrivals after dark.

A breakdown of these monthly totals into weekly totals shows that the first full week in May is clearly the start of the peak, which increases to a climax by the last week in May, but drops suddenly with the start of the rains, and also of the new academic school year in South India in the first week in June (Table 4).

TABLE 4[a]

TOTAL WEEKLY ARRIVAL OF PRIVATE CARS AND PASSENGERS AT THE PEAK OF THE HILL-SEASON

Week	Private Cars	Passengers
April 22 - May 3	169	689
May 4 - May 10	303	1,182
May 11 - May 17	321	1,582
May 18 - May 24	566	2,627
May 25 - June 7	88	281

[a] Source: personal survey.

There was considerable difference in the number of arrivals in Kodai during weekdays as compared to weekends. During the first three weeks of April at the beginning of the season an average of 6 cars and 25 passengers per weekday, arrived in Kodaikanal during daylight hours (Table 5). At weekends during the same period the averages were much higher, 13 cars with 40 passengers on Saturdays, and 20 cars with 76 passengers on Sundays. In late April and throughout May the arrivals increased steadily. During the last fortnight of April the averages rose to 13 cars with 63 passengers on weekdays, 26 cars with 102 passengers on Saturdays, and 49 cars with 135 passengers on Sundays. In the first half of May the increases were again considerable. Average figures were 40 cars with 179 passengers on weekdays, 48 cars with 204 passengers on Saturdays, and 66 cars with 280 passengers on Sundays. During the latter half of May the figures reached their peak. The average number of cars arriving in Kodai was 85 on weekdays, 94 on Saturdays, and 121 on Sundays, while the average numbers of passengers they contained were 459, 477, and 597 per day, respectively. The highest actual daily record of passenger arrivals was 675 on Sunday, May 31, 1970. The average number of arrivals dropped sharply in the first half of June to be almost as low as those of early April. Table 5 shows the daily averages of car and passenger arrivals throughout the season with figures given in weekday (Monday through Friday) and weekend (Saturday and Sunday) averages.

It would appear that the choice of the last two weeks in May for Kodai's Summer Festival was indeed an appropriate one on the part of the Township Committee. If the

TABLE 5[a]

AVERAGE DAILY ARRIVALS OF PRIVATE CARS AND PASSENGERS IN KODAIKANAL DURING THE 1970 HILL SEASON

Week	Weekday Average		Weekend Average	
	Cars	Passengers	Cars	Passengers
First in April[b]	5	19	20	77
Second in April	7	24	19	66
Third in April	7	28	23	52
Fourth in April	10	43	31	100
Fifth in April	16	83	44	138
First in May	39	157	54	199
Second in May	40	200	60	295
Third in May	75	364	96	417
Fourth in May	94	547	119	658
First in June	10	39	16	42
Second in June	7	31	26	80
Third in June	5	24	12	59
Fourth in June	6	24	10	36
Fifth in June[b]	8	29	-	-
Daily average for entire season	23	115	41	173

[a] Source: personal survey.

[b] Figures derived from that proportion of the week in the calendar month.

festival continues and becomes a permanent Kodai tradition, it may well be a cause for the continued arrival in future of great numbers of visitors at that time.

There were also other modes of travel used by visitors. Throughout the three-month season, tourist buses arrived at the hill-station.

The tourist bus count showed that approximately 13,000 tourists paid quick visits to Kodaikanal in the 1970 season, 3,000 in April, 7,000 in May, and a further 3,000 in June. In both April and June, two or three tourist buses, each with a seating capacity of 45 to 50 people, arrived at the hill-station daily. Throughout May their average number rose to five or six on weekdays and nine or ten on Saturdays and Sundays, with fifteen on both the last two Sundays in May. With very few exceptions the buses were filled to capacity. Most of them were contracted by tourist companies from Tamilnad or Kerala cities. They included Kodai in an itinerary of both scenic and pilgrimage centers, many of them also visiting temples on the plains at Madurai, Tiruchirapalli, Tanjavur, Palni, and as far as Rameswaram or Cape Comorin. Many of these tourist buses also visited the Periyar Game Sanctuary on the Cardamom Hills at Thekkadi. They usually arrived in Kodaikanal in the morning, took their passengers sight-seeing during the day, and returned them to the plains at night. This alleviated both the problem of finding sleeping accommodation during the crowded season, as well as the difficulties which would confront plains' peoples totally unaccustomed to and unequipped for air temperatures which reach the low fifties (Fahrenheit) at night. Though the tours were usually organized by South Indian companies, they contained many tourists also from other parts of the country, especially from the West Coast and Bengal, who were visiting the South by these means.

There were other bus arrivals in Kodai, who were unable to be counted by any feasible methods. Local buses, linking up with the railroad system at Kodai Road or Madurai, or offering a direct service to local centers such as Periyakulam, Bodinayakanur, Dindigul, etc., arrived in Kodai from 8:00 a.m. to 11:30 p.m., some twenty buses driving up each day.[1] Many of Kodai's permanent residents use these bus systems frequently, as do also many of the seasonal visitors, not only those who have travelled short distances by bus, but also the long-distance train travellers, and even air passengers, at present still only a small group, who do not wish to use the comparatively expensive taxi service. No attempt was made systematically to differentiate between permanent and seasonal visitors arriving in Kodai by public transport buses. However, samples were taken at bus stops, among visitors, and at hotels later. The combined results of such efforts show that approximately half Kodai's seasonal visitors who stayed at least a few days and used the hill-station facilities, arrived by public transport, and half came by private cars.

It is thus estimated that some 25,000 visitors came to Kodai for the 1970 hill-season, apart from the 13,000 who visited only for a few hours in a contracted tourist bus on part of a longer tour, and, of course, the 16,500 permanent residents already there.

Survey of Hotel Registrations and Private Guests

Efforts were made in this survey to check the number of hill season visitors through the hotels and guest houses. Kodai now has fifteen lodging houses for tourists, both government and privately owned. Some provide lodging only, others full board. Some of these cater only to Indian customs and diet, others to both Indian and Western tastes. With the kind permission of all the hotel proprietors and Travellers Bungalow managers, the total numbers of registered visitors were made available, together with other pertinent information for an analysis of Kodai's hill-season clientele.

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[1] In 1938 the various competing private bus companies united to form the Kodaikanal Motor Union, who kept the monopoly of public bus travel on the Ghat Road until 1968, when the first Madras State Express buses to Tiruchirapalli and Tuticorin went into service. In 1970 the Kodaikanal Motor Union disintegrated. Its buses were divided among shareholders, and the union has been replaced by several smaller companies.

A total of 11,566 guests registered at hotels in Kodaikanal during the 1970 hill season. A consistent progression was discovered from the large numbers of people, approximately 72 per cent of the total registered guests, who stayed at hotels for only a short period of less than one week; to the medium numbers who stayed for somewhat longer periods, 20 per cent between one and two weeks, and 6 per cent who remained from two to four weeks; to the very small number, only approximately 2 per cent of the total, who stayed for a long period of more than one month. This was true of all categories of hotels, though the progression was more pronounced in the hotels which provided lodging but no board (Table 6).

TABLE 6[a]

KODAIKANAL: LENGTH OF STAY OF SEASONAL VISITORS IN THE 1970 SEASON

Hotels		Length of Stay				
Category	No.	Less than One Week	1-2 Weeks	2-4 Weeks	More than Four Weeks	Total
Lodging only	8	3,519	622	193	10	4,344
Board and lodging Indian food only	4	2,243	490	70	55	2,858
Board and lodging Indian and Western food	3	2,864	1,108	333	59	4,364
Total all categories		8,626	2,220	596	124	11,566

[a] Source: personal survey.

Hotel owners naturally favor the longer-term visitor especially as all hotels and lodging houses in Kodai are filled to capacity during much of the season. Preference is also given to visitors who have booked well in advance. Especially in May, almost every lodge adopts a system of accommodating only those people who will stay at least two weeks. Despite this policy (as shown in Table 6) there is a great tendency for visitors to stay only for shorter periods.

Though these figures give an accurate account for the registered visitors, they are, however, somewhat unrepresentative of the total hill-season picture. An early characteristic of the hill-station, which made it very different from an ordinary holiday resort, was that much of its land was bought as privately owned compounds, which allowed their owners to live very cheaply for an indefinite length of time. As Kodai's permanent population has grown steadily, the number of people who can visit relatives and friends in Kodai has also increased proportionately. Such visitors, however, do not register anywhere, and thus are almost impossible to count short of a fully-fledged census operation taken during a hill season. They form, however, a considerable proportion, more than 50 per cent, of the total visitors to Kodaikanal. Because of this, small sample counts were taken in several of Kodaikanal's residential areas: among the compounds of the elite; in residential districts of middle-class Indian permanent residents; and in bazaar areas of Munjikal.

A totally different picture was obtained through these sample counts. Many wealthy Indians who have retired in Kodaikanal from Bombay, Calcutta, or Madras, have long-term relatives staying with them. These are frequently elderly people, invalids, or newlyweds, who remain for many months. Occasionally they stay longer than one year, but if they are not themselves hill-station home owners, they still tend to regard themselves as citizens of the cities of their origins, rather than permanent residents of Kodaikanal, their adopted home. Many of them, in fact, do return to the plains during Kodai's winter rainy season.

This tendency towards longer-term visitors is also noticeable in the middle-class residential areas. Here the trend is for greater numbers of visitors to come to Kodaikanal, but they stay for comparatively shorter periods of time. Such visits are sometimes part of reciprocal arrangements involving friends as well as family, where other services are rendered or desired, in exchange for a visit to the hill-station. College students frequently spend university summer vacations at Kodaikanal.

Among the poorer economic groups, seasonal visitors to Kodai are very often relatives in search of seasonal employment as personal servants to the wealthy hill-station clientele, hotel employees, and the like.

Visitors to all three types of residences include both long and short term vacationers.

Alien Registration

Aliens in possession of a visa or special endorsement permitting them to work in India, are expected to register at the police station shortly after arrival at a new location.[1] During the 1970 hill season, somewhat over 1,000 foreigners registered at Kodaikanal: 275 in April, 525 in May, and 215 in June. These registrations accounted for most of Kodai's European hill-clientele. Of this total, approximately 80 per cent were American and 20 per cent Swedish, with minimal numbers of Germans, other Europeans, and registered Commonwealth citizens. Foreigners staying only a short time, however, do not need to register, nor do many Commonwealth citizens who reside in India. Thus it was difficult to discover how many arrived who did not have to register. This situation has accelerated in recent years since an increasing number of Kodai School parents no longer remain in Kodai for the season.

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[1] In July, 1967, it became necessary for those Commonwealth citizens who wished to work in India in connection with a Christian mission or educational institution, to apply for prior permission to do so. They received a Special Endorsement which is similar in implication to an alien Visa.

In 1967 the school administration modified its school calendar to allow a full month's vacation between semesters from mid-May to mid-June. Formerly, the break had been shorter. Since this extended vacation many of the parents who work in South India have chosen not to take their hill-leave during the crowded hill-season period. Instead they spend perhaps a day or two in Kodai in May without having to register, take the children home for the month, and fit in their leave either in mid-June, or some other convenient time of the year.[1]

Effects of Indianization

The effects of Indianization with regard to the changing seasonal clientele are two-fold.

Since Independence there has been a steady and rapid increase in the total number of visitors to the hill-station. Though the actual number of Europeans, at least until very recently, also increased, the increase among the Indian visitors was so rapid that the relative proportion of Europeans declined noticeably. It is now, perhaps, as low as one European to 35 Indian visitors.

As well as the steady change in ratio of Indian to European visitor, there is also a noticeable trend towards a shorter length of stay (as noted in Table 6). This is very different from the early hill-station years. In the early days the Europeans, arriving after considerable hardships and feeling the necessity for physical and emotional recuperation, stayed as long as possible. Today, the hill-station is easily accessible, making it possible for those requiring a change of environment to come up at any time, a factor which partially eliminates the necessity for prolonged visits. Furthermore, most of the seasonal visitors are Indians who do not have the same perception of the hill-station as did former British civil servants. Many of them are of a newly forming economic middle-class who can now allow themselves a vacation in the hills, but who have neither the time nor the finances for a lengthy stay. As noted above, for many, the tourist bus fulfills their needs within their means, and for somewhat wealthier clients, a short stay at the hill-station brings both physical and social benefits. Very few can afford to stay at hotels for long periods at a time.

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[1] There has been an increasing number of Kodaikanal School parents at Kodai in September. The southeastern districts of Tamilnad receive rain primarily with the Northeast Monsoon, and temperatures are reached as high as those of the pre-Southwest Monsoon period in May. In these same districts there is an Indian inter-term school vacation at this time so that missionaries connected with the educational system can take a hill-leave in September.

This trend towards short and, perhaps, frequent visits to the hill-station affects Indians and Europeans alike. However, its causes among the two groups seem to be very different. Among the European hill-season clientele there appears to be a correlation between distance travelled and length of stay at the hill-station. Although the Europeans who have children at residential schools and who work in South India, have recently shown tendencies to come up frequently for only short periods, the Europeans who travel long distances cannot afford to travel often, so they spend as long as possible with their children when they do come. Most of them in 1970 visited from mid-May to mid-June, the new school holiday, and added to this as much time as their hill-leave allowed. Those furthest distant, from the Persian Gulf states (Fig. 37), continued to arrive in July and August as in the past, for these are the hottest months of the year on the Arabian Peninsula and thus the time the workers there take vacations. It was of concern to them that they were unable to be with their children during the month of school vacation.

Among the Indian personnel, there seems to be little correlation between length of stay and distance travelled. Instead, it is largely a question of profession or career on the plains and of property ownership in Kodai. The Indians who stayed for long periods at the hill-station in 1970, fell into two major categories, the retired civil servants who did not have cause to return quickly into the heat, and the newly wed couples who had not yet started into the family business and home life.

Changes in Seasonal Activities

Both expansion through continuity and expansion through radical change are apparent in post-Independence hill-station activities. In some instances there was continuation of activities according to traditional European origins with slight modification of emphasis, showing the results of cultural interaction as European ideas were adapted to Indian interpretation. Radical change has come about particularly where the hill-station has become a center for short-term tourists instead of long-term recuperation. This latter trend is an indigenous addition which requires a re-definition of the term hill-station to include tourism (see Chapter III). Both processes show distinct signs of urbanization.

As an overwhelming proportion of short-term tourists spend their time sightseeing, and favorite spots are also visited by long-term clientele, one may claim that enjoying the scenic beauties of the countryside and picnicing in them is still the most popular entertainment at the hill-station. Just as in the early days the Europeans were exuberant about the beauty and restfulness of their hill-station, which often reminded them of home, so today, many thousands of Indians can annually enjoy the refreshing green hills and waterfalls, the view of which is for many of them a new adventure. Whereas the early visitors discovered unknown secrets, today's sightseer follows a well-trodden path to now famous spots, but to him they are at first equally secret and exciting.

For the visitor staying several days or weeks, the club programs continue according to long-established tradition. Boating is as popular as ever; golf and tennis matches occur regularly; concerts and dramas are now available as planned under both club and municipal auspices. Since Independence the K. M. U. have sponsored a set of four Community Chest programs each season: one concert, A Gilbert and Sullivan alternating with an Oratorio; one play produced by Kodai School; a dramatical evening, usually consisting of three one-act plays, each produced by a different group; and a religious play. Religious and medical debates and conventions continue as before.

At first all appears unchanged. However, subtle differences may quite soon become radical changes. For several years it has become more difficult to find sufficient people really interested in the production and acting of dramas and musicals. Increasingly, K. M. U. members from the South are unavailable during the season weeks for rehearsals, as they prefer frequent short visits to one long hill-leave, and are happy to have their children go home to the plains even in the warmth of late May. In the 1969 planning meeting for the Community Chest activities it was considered necessary to reduce the four season events to three for the following year. By June 1971, the enrolment at Kodai School had dropped by nearly one hundred since May 1969, and at least that number of parents will be fewer at the 1972 hill-season. British missionaries are also expected to be considerably fewer. It may not take many years for the entire K. M. U. program to be phased out. In the Indianization program, however, these traditions will nevertheless continue through their adaptation by the Season Committee. The municipal-sponsored two-week concentrated activity program has included in one season: three different Indian dance recitals; three drama troupes and variety shows; three boating events, a pageant, a regatta, and a prize-winning angling competition; cricket, rifle-shooting, golf, and sports competitions; livestock and horticultural exhibitions; a costume parade, an international fun-fair, and Children's Day festivities. The spirit of such a program continues the earliest hill-station traditions but with an Indian rather than a European format.

The K. M. U. is still very largely organized by Europeans and though it has many Indian members, some of whom occasionally take active roles in managing sales or producing drama activities, it is essentially the one remaining foreign enclave with regard to hill-season activities. Its membership grew steadily since Independence, until recently. Now, apart from the decreasing numbers of both British permanent residents and seasonal British visiting missionaries, its membership is largely American. Since many of the Americans have been able to visit Kodai more frequently, staying only for shorter periods in recent years, and since most mission terms of service have been reduced from seven years in the early 1950s to three years or less in the late 1960s, they too, no longer feel the need for the social entertainments which were so much a part of early hill-station life. It is unlikely that the entertainment program of the K.M.U. would continue without strong support from the parents and teachers at Highclerc School. Whether or not any communal type of program such as conventions, weekly teas, industrial sales, will continue when the mission properties are no longer used by the Europeans, will probably depend on the financial status of the Indian churches. As Indian Christians have not yet become a predominant force at the hill-station today, it is unlikely that they will concern themselves to any great extent in the future with such organizations as the K. M. U.

The English Club, Boat Club, and Golf Club have long since become thoroughly Indian. Their numbers continue to rise steadily. Even though there is a tremendous increase in the numbers of sightseeing tourists, who do not require facilities provided by these clubs, there has equally been a steady rise in numbers of people staying in Kodai from a few days to a few months, who often join a club. The popularity of the clubs depends to some extent on the types of facilities they offer. The English Club supplies lodging, tennis courts, a library, and indoor games rooms, all of which could be most useful for either a long or a short stay. Furthermore, membership is connected with that in English Clubs elsewhere in India. Thus members of the English Club in Madras, Tiruchirapalli, or Munnar, are entitled to stay at the English Club in Kodai, provided there still is room. Membership fees are quite high, and members are mostly wealthy urban Indians who are also members on the plains. The executive of the English Club had occasionally included Indians already in its early years. Permanent British Kodai residents, however, continued to accept the largest managerial responsibilities even several years after Independence. But through the years they have gradually been replaced by Indians.

The Golf Club has never been the type of club which ordinary tourists join, because golf is an expensive game. Though the club in Kodai was formed originally by British and Americans together, with the improvements in the course and erection of a club-house in 1926, it was necessary to raise fees. There were enough wealthy British and Indians who could afford the higher costs, but for several decades in the early twentieth century the Americans, as they were mostly missionaries, could not afford to join the Golf Club. In the depression years of the 1930s club membership dwindled, and rather than raise subscriptions, a suggestion was followed that gave special fee concessions to missionaries. The interested missionaries in their turn, guaranteed a minimum membership from their group so that enough money was forthcoming to clear the club's debts. Though Indians had often had representation in executive roles before Independence, it was the British who had the greater share of the responsibility. In fact a British Kodai resident retained the important job of secretary until as late as the early 1960s. But long before that all other responsibilities had gradually been taken over by Indians. In the early years of Independence an interesting tradition was started, in that Golf Club captaincy, the chief functionary organizer for the season's tournaments and activities' program, was strictly rotated on a nationality basis. One year the Captain was British, the following year an American, and the third year an Indian. This routine is at present still maintained, but in all probabilities there will soon be too few Americans and British members to warrant the rotation.[1]

The Boat Club has perhaps remained the most popular club in Kodai. Membership fees are payable on a monthly as well as an annual basis, and they are very low. Most visitors who can afford to come to Kodai can afford a month's membership fee, whereupon they may take boats out for an hour on the lake whenever a boat is available. Already by the 1930s managerial posts were in the hands of Indians and the Boat Club was the first of Kodai's clubs to be run entirely by Indians. As well as hiring out boats and maintaining a regular ferry service, the club also co-operates with the Township Committee for several season events including a pageant and a regatta.

The year 1969-1970 showed a somewhat unusual trend in hill-station activities. Several universities in Madurai and some from as far away as Madras city, brought groups of students to the Kodai Hills to study the Strobilanthes plants. A member of the Acanthus family, S. isophyllus grows in sheltered, boggy river valleys at Perumalmalai, Poombari, Kavanji, and Naidupuram within a radius of five to eight miles from Kodaikanal. It blooms only once in twelve years, and the students spent three or four days in Kodai collecting and studying the plants for botanical analysis. In all probability the plant, covering the valleys with a beautiful purple sheen, attracted additional visitors to Kodai this season.

Changes in Range of Hinterland

Distinct changes are visible in the Indianization of hill-stations, even among those sections of the population who keep up the traditional use. In the first instance the extent of influence of Kodaikanal is considerably more widespread than it was in its early years. Secondly, the urbanization trend is particularly noticeable. The European clientele largely came from rural areas of India so that to them the camaraderie and social life of the hill-station were of great importance. The modern Indian who visits the hill-station is generally an urbanite. His basic need is thus to get away from the many social demands of his normal life.

The ranges of the hinterlands of Kodaikanal two decades after Independence can be measured in several ways. Figures 37 and 38 show the areas from which children travel to reach their Kodai schools. The two English-medium schools have been selected for this study as the Tamil schools cater for a local population only and the Swedish School is

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[1] In 1971 no American captain was forthcoming. A Swede was elected instead.

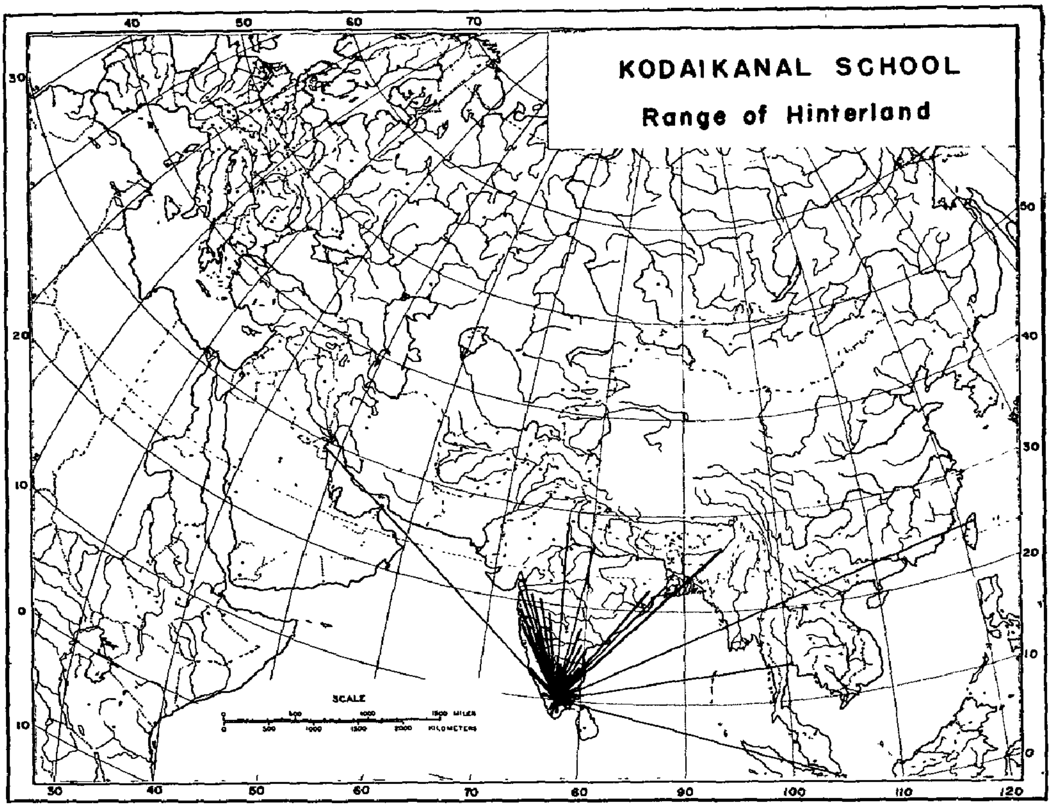
KODAIKANAL SCHOOL
Range of Hinterland
SCALE
0 500 1000 1500 MILES
0 500 1000 1500 2000 KILOMETERS
40 50 60 70
30 20 10 0 10
50 40 30 20 10 0
30 40 50 60 70 80 90 100 110 120

Fig. 37

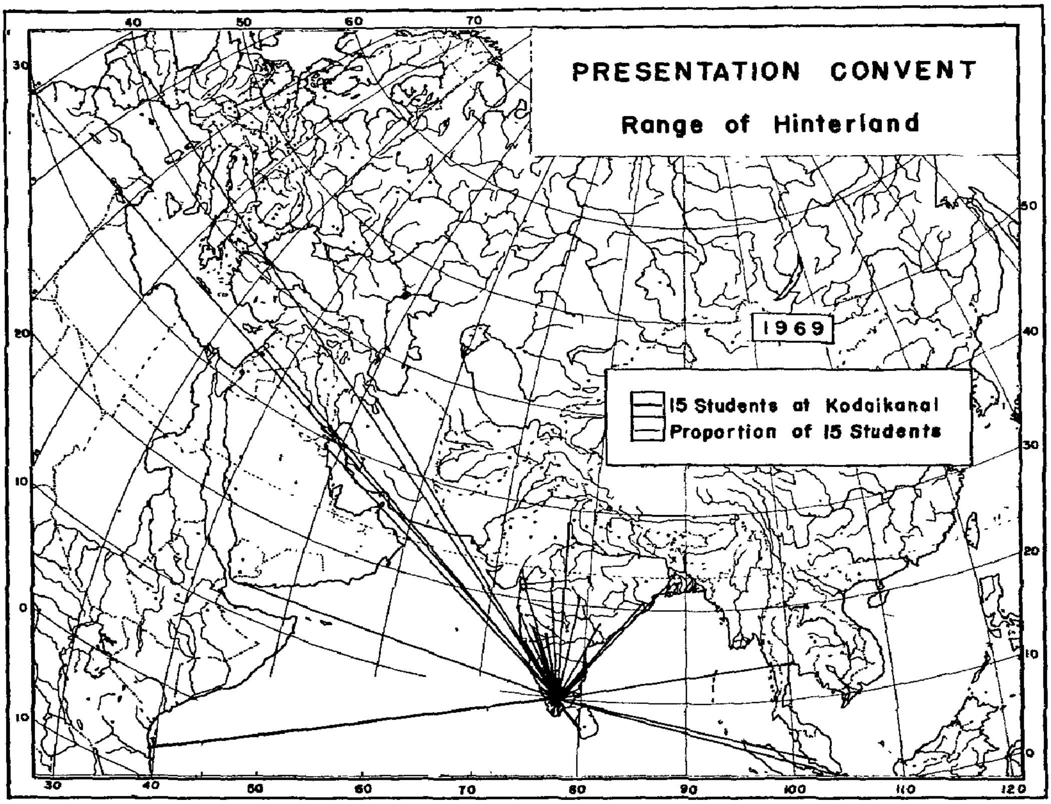
PRESENTATION CONVENT
Range of Hinterland
1969
15 Students at Kodaikanal
Proportion of 15 Students
40 50 60 70
30 20 10 0 10
50 40 30 20 10 0
30 40 50 60 70 80 90 100 110 120

Fig. 38

comparatively very small. Figure 37 shows that the Europeans and small group of non-Europeans who send their children to the American School work predominantly in Peninsular India. The great majority of them live in Tamilnad, Andhra Pradesh, Maharashtra, Bombay, and Kerala. It is thus expected that they use the facilities of Kodai School. Comparatively large numbers of them are from Orissa and Assam, approximately equidistant between Kodai and Woodstock schools. As already noted, this clientele is basically American and thus concerned that their children receive an American schooling. The flow from Uttar Pradesh is of particular interest, as it represents six children from three families, two of them actually living in New Delhi, who choose to send their children south to school, rather than to the more conveniently located Delhi International School, or Woodstock, which is an easy bus-ride from Delhi. A similar map for the students of Woodstock would be complementary to this one, showing a dense flow from the northern Indo-Gangetic plains, probably none from South India, and only small areas of overlap in Central and Eastern India. Students travelling into India from abroad in order to reach Kodai School, form only 7 per cent of the total school community. The choice of Kodai School represents the fact that Kodai is either the nearest school, or in the case of equidistance between several schools, probably the cheapest which offers an American curriculum.[1]

Figure 38 shows interesting differences with regard to Presentation Convent in both extent and concentrations of hinterland. Whereas 37 per cent of Kodai School students came from areas in Tamilnad, only 25 per cent of the Convent's parents worked in the local state, despite the fact that the school accepted 25 local day students from Kodaikanal itself. While 66 per cent of Kodai School parents worked in the four southern states of India only 45 per cent of the Convent parents were from this southern area. As Kodai School students are primarily American, there is no other choice of school for them in South India. For the Convent, however, the situation is clearly different. There are several English-medium schools which offer university entrance to both Indian and British universities. Parents thus have a choice of schools and make their decisions according to distance, school fees, and educational standards. As a greater proportion of the Convent's students come from North India when compared to those of Kodai School, it would appear that the combination of high teaching standards and low costs plays an important role in attracting families from the more distant north. This inference is even more clearly supported by the percentage of students travelling to the Convent from abroad. A comparatively high number of students, 17 per cent compared to Kodai's 7 per cent, come to Kodaikanal from outside India. Their parents are Indians or Eurasians working abroad who prefer to send their children back to India to school. There would be considerable choice of schools for them and presumably costs and educational standards, perhaps together with an unwillingness to become too deeply involved in different cultures, have decided the choice of Presentation Convent. Certainly the hinterland of Kodaikanal is greatly extended because of this choice.

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[1] All three American schools in India, Kodai, Woodstock, and Delhi International, are accredited U.S. schools, thus a difference in educational standards is not an important issue.

Figure 39 attempts to show the range of hinterland with regard to seasonal visitors, excluding parents of Kodaikanal School and Presentation Convent, as these were already considered in the previous figures. Also omitted were the approximately 13,000 visitors who arrived in tourist buses, stayed a few hours, and continued on their tours.[1]

The data for Figure 39 were chiefly derived by counts taken from three sources, licence-plates of the cars arriving in Kodai, hotel records of people staying in the hill-station, and sample counts taken from a survey of private homes. They represent that section of Kodai's clientele using the hill-station in the traditional manner, as a means of physical, mental, and social refreshment and relaxation from a term on the plains.

The total number of seasonal visitors to Kodaikanal in 1970 has been estimated as 25,000. Those who registered at hotels and guest houses numbered 11,566. Those who stayed with relatives and friends were estimated in three different ways. The survey of homes method showed that approximately 85 per cent of Kodai's permanently occupied houses received an average of four or five summer visitors during the season. One can, therefore, estimate that the total number of guests who stayed with relatives and friends in 1970 was somewhere between 12,000 and 17,000. This may be compared with the results of samples taken at bus stops, among visitors, and in some hotel records which indicated that somewhat less than 50 per cent of the visitors arrived in their own vehicles, while a little more than 50 per cent used public transportation. As 12,365 were counted to arrive by car, one can estimate that a further 12-13,000 probably came by bus. Thirdly, sample questionnaire forms were distributed primarily to obtain information concerning Indian perception of the hill-stations purposes. Estimates based on these forms also point out that somewhat more than half the total visitors, i.e. between 13-14,000, stayed with friends and relatives. Of a total of 429 people who completed questionnaire forms, 196 lived with relatives; 156 stayed at hotels or guest houses; while 77 rented their own houses for the season. All three types samples suggest a possible 12-13,000 unregistered visitors, and support the estimate of 25,000 total visitors.

The car and hotel counts showed a similar flow pattern. The sample count of visiting friends and relatives pointed to a higher proportion of local visitors, as one would expect. The three counts together show that approximately 80 per cent of the seasonal visitors in 1970 (a typical hill-season year), were from the four southern Dravidian states,

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[1] By far the majority of tourist buses originated in the state of Tamilnad. However, many of them contained passengers from Bombay and even further afield, who joined the tour in Madras.

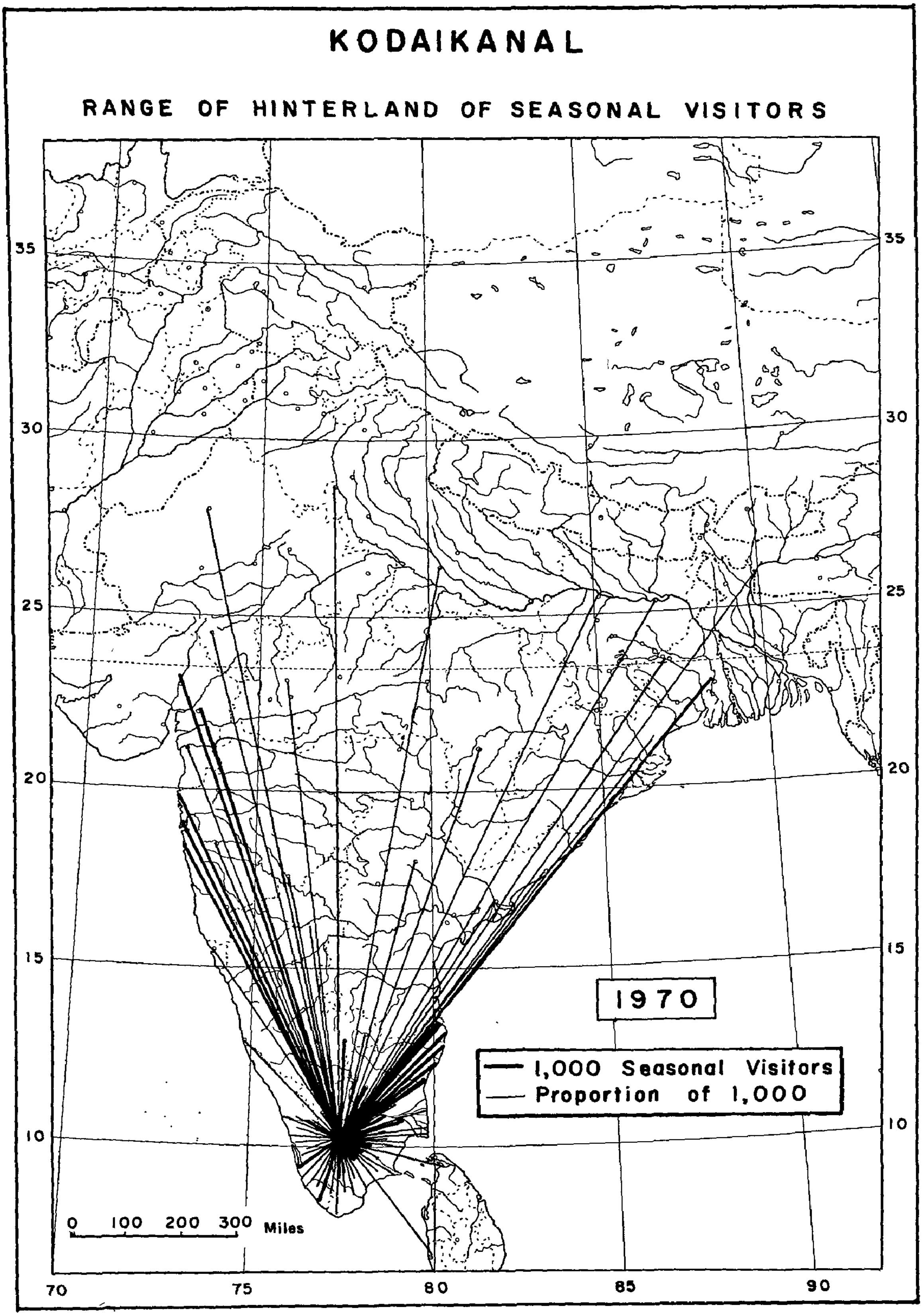
KODAIKANAL
RANGE OF HINTERLAND OF SEASONAL VISITORS
1970
1,000 Seasonal Visitors
Proportion of 1,000
0 100 200 300 Miles
35
30
25
20
15
10
70
75
80
85
90

Fig. 39

and of these approximately 75 per cent were from Tamilnad, the large majority of them coming from Madras City. The second largest major area of origin of seasonal visitors, with a total of 16 per cent, was the northwest coast including the states of Maharashtra and Gujarat. By far the great majority of these visitors were from the cities of Bombay and Ahmadabad. Most of the visitors from the east coast states of West Bengal and Orissa came from the city of Calcutta, whereas those from Central India originated from widely scattered towns in Madhya Pradesh. Though visitors came to Kodaikanal from many of the northern cities, including Delhi, their total numbers represented less than 0.5 per cent of the entire seasonal population. No state remained unrepresented at Kodaikanal. Table 7 shows the range of hinterland of seasonal visitors for 1970.

TABLE 7[a]

RANGE OF HINTERLAND OF SEASONAL VISITORS
TO KODAIKANAL, 1970

State of Origin	Percentage of Visitors
Tamilnad	59
Maharashtra	14
Kerala	7
Andhra Pradesh	7
Mysore	7
Gujarat	2
West Bengal	2
Madhya Pradesh	1.5
All other States	0.5
Total States	100

[a] Source: personal survey.

Assembling Center for Hill-Grown Fruits and Vegetables

Perhaps the greatest change in hill-station functions of post-Independent India is the new large-scale development of Kodaikanal as an assembling and distributing center. Though there is a long, and to some extent continuous, history of trade between the plains and the hills, this modern function is an expression of radical change rather than expansion through continuity. It also demonstrates an urbanization aspect of these new processes, in that the produce is grown exclusively for urban consumption.

In all likelihood some type of trading between hill-products and plains goods has been taking place since the earliest existence of both hill and plains peoples in juxtaposition. The early literature shows a knowledge on the part of Sangam writers of crops which grow only in the hills, and such commodities as medicinal herbs, including tree-bark, honey, garlic, and hill-fruits have had a long trade history. Writing of the late nineteenth century Grierson explained the silent barter system of the Palaiyans with the plains people:

> The mountaineers of Madurai . . . occasionally trade with the country people who place cotton or grain on some stone and the wild creatures as soon as the strangers are out of sight, take them and put honey in their place, but they will allow no one to come near them.[1]

In the days of the British colonial hill-station Europeans left the hills with whatever fresh fruits and vegetables could be eaten before they would spoil on the journey. Later when Kodai became more easily accessible, baskets of European vegetables and fruits were sent by bus and rail to European compounds on the plains, and certainly European housewives today during the hill-season preserve whatever fruits they can carry down with them to the plains, as the brisk trade in bottling jars at the Kodai May sales indicates.

The Current Situation

The large-scale shipment of hill-grown produce to cities on the plains is a post-Independence trade. Starting in a small way with the Upper Palni villagers bringing their produce into Kodai in headloads for sale to the season visitors, the trade expanded to the villagers growing specifically European-type fruits and vegetables for the hill-station, and thence to bringing them to the station not for local use, but for export to cities on the plains. From isolated villages the goods are still today carried by headloads or pack ponies to the collecting point, either at Kodaikanal or some spot along the roadside (see Figs. 40 and 41), where they are picked up daily by truck for shipment to the plains. The operation has become a large-scale economic enterprise involving land-owners, laborers, and trucking firms, as well as merchants and store-keepers. In all its phases it is privately organized with governmental sanction.

Records are not available to the public, thus field-work for this section of the survey involved contacts with many different types of people. Through their kind co-operation it was possible to procure a picture of the entire situation. Arising out of a small-scale hill-station function which was concerned with feeding its seasonal visitors, fruit and vegetable growing for export has become a new economic function, independent of the hill-season clientele. As such it forms the only economic activity in Kodai apart from the tourist trade.

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[1] P. J. H. Grierson, The Silent Trade (Edinburgh: Green & Sons, 1903), p. 46.

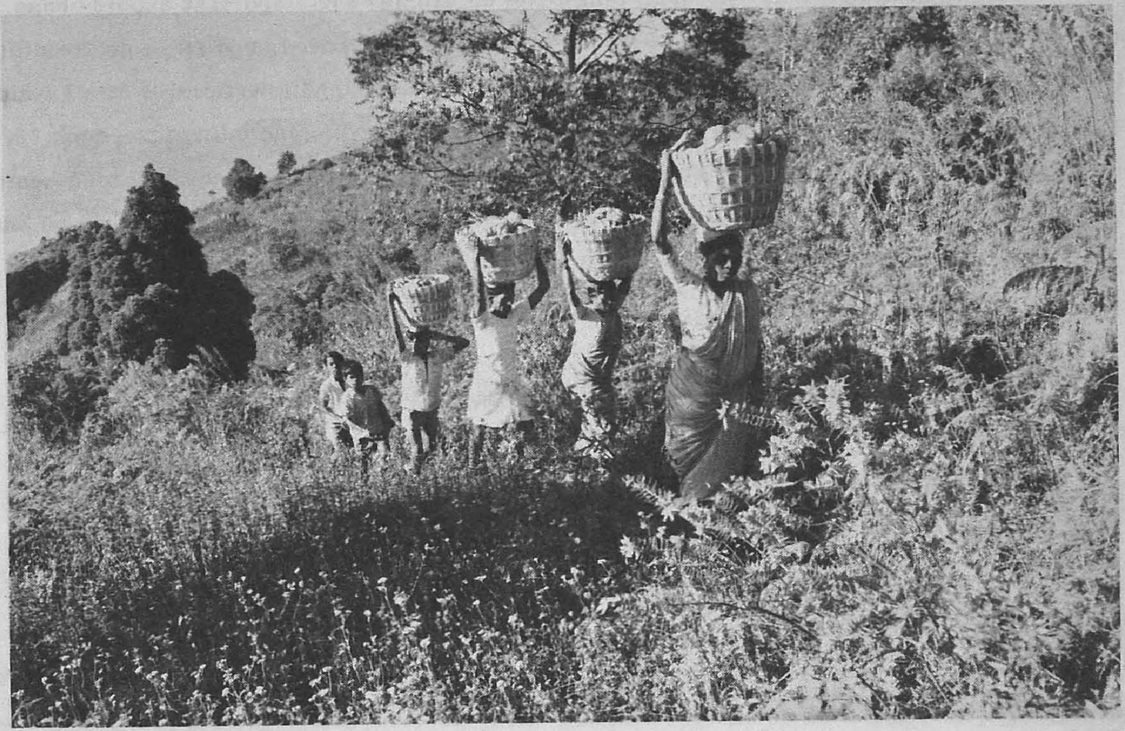

Fig. 40.--Headloads of fruit from Vellagavi being carried to Kodaikanal to supply the hill-station. The terrain is too steep to allow a motor road to be constructed.

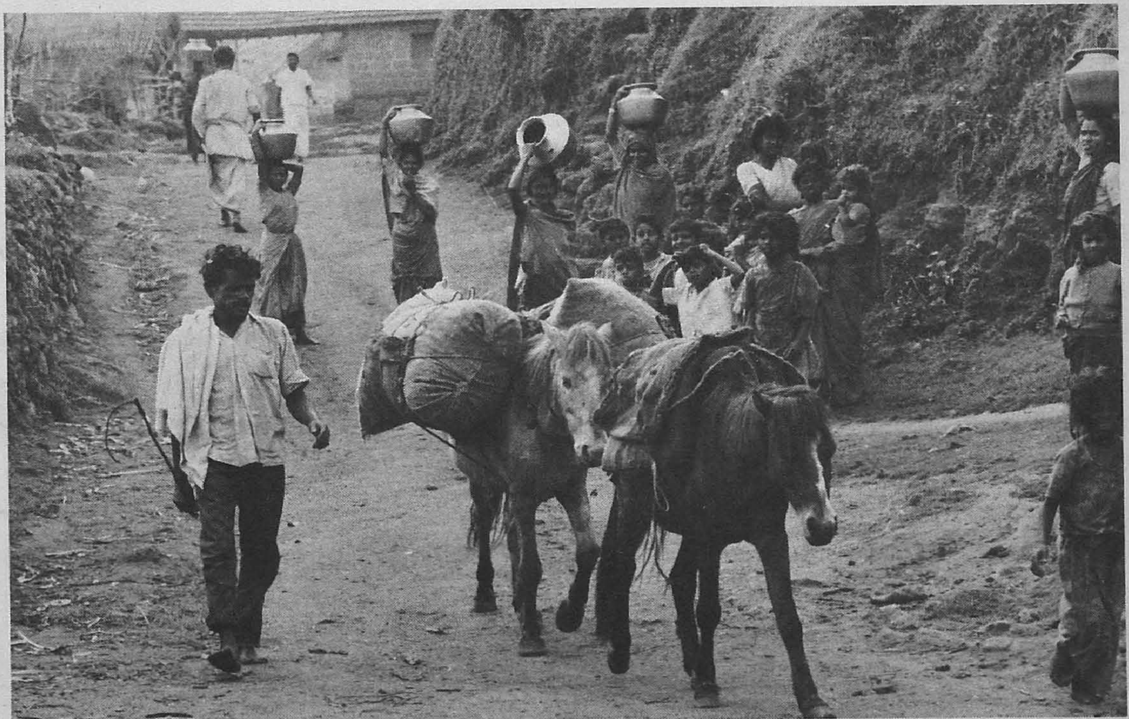

Fig. 41.--Pack-ponies returning to Mannavanur. They came to Kodaikanal with European vegetables and bring back a load of rice.

From the Kodaikanal area both fruits and vegetables are important export crops. The fruits include several types of pears, apples, plums, peaches, and apricots from the altitude of Kodai, and oranges[1] from approximately two thousand feet lower. The Lower Palnis had long since established a coffee and plaintain trade, which is unconnected with this recent Kodai development. Many types of English vegetables such as cabbages, carrots, turnips, beetroots, kohlrabi, various types of beans, peas, cauliflower, onions, and garlic are cultivated by the villagers for export. The most important crop is the potato which has become the staple cash crop for many villagers in the vicinity.

Potatoes

Potatoes are grown in all the surrounding villages, but eight of them, including Kodaikanal itself, specialize in potato cultivation. They are, in order of size of acreage cultivated: Mannavanur with approximately 1,750 acres: Kodai, Poombarai, Kukkal, Poondi, and Kavangi with 1,500 acres each; Vilpatti with approximately 1,250 acres; and Perumalmalai with 1,000 acres.[2] Thus some 11,500 acres of Upper Palni hill tracts are now devoted to potato-growing. The yield varies somewhat from village to village, between five and six tons per acre annually. The two chief varieties are President and Great Scott, yields for both being similar. Crops are grown on carefully terraced hill-slopes along which extremely complex, though primitive systems of irrigation using bamboo trench guides, have been painstakingly erected. Figure 42 shows a few of the terraced crops at Poombarai. Altogether more than 60,000 tons of potatoes are grown annually from the eight villages. A few potatoes are ready for lifting by January, but the main potato harvest starts in March. In July, the peak of the season, 75 per cent of the total crop is harvested. By September the season is over and between September and December few potatoes are available. Nevertheless potatoes are seen all year round in the bazaar at Kodaikanal.

During the course of the year some 12,000 truck-loads of potatoes are carried down to the plains. Approximately 30 per cent of the potato crop is used at the hill-station itself, the other 70 per cent being exported chiefly to Madurai, Dindigul, and Tiruchirapalli, with some going as far as Madras City. In recent years some potatoes have been exported to Ootacamund which is in itself a potato-growing area. The potatoes are sacked in hundredweight bags.[3] In season periods lorries travel the entire Forty-Mile Round several

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[1] The oranges are locally known as loose-jackets as they are a type of tangerine with loose skins.

[2] For location of these villages see Figure 28.

[3] The old British system of 112-lb. bags is still used for potatoes, rather than 50-kilo bags, though the produce is sold in the retail markets by the kilo.

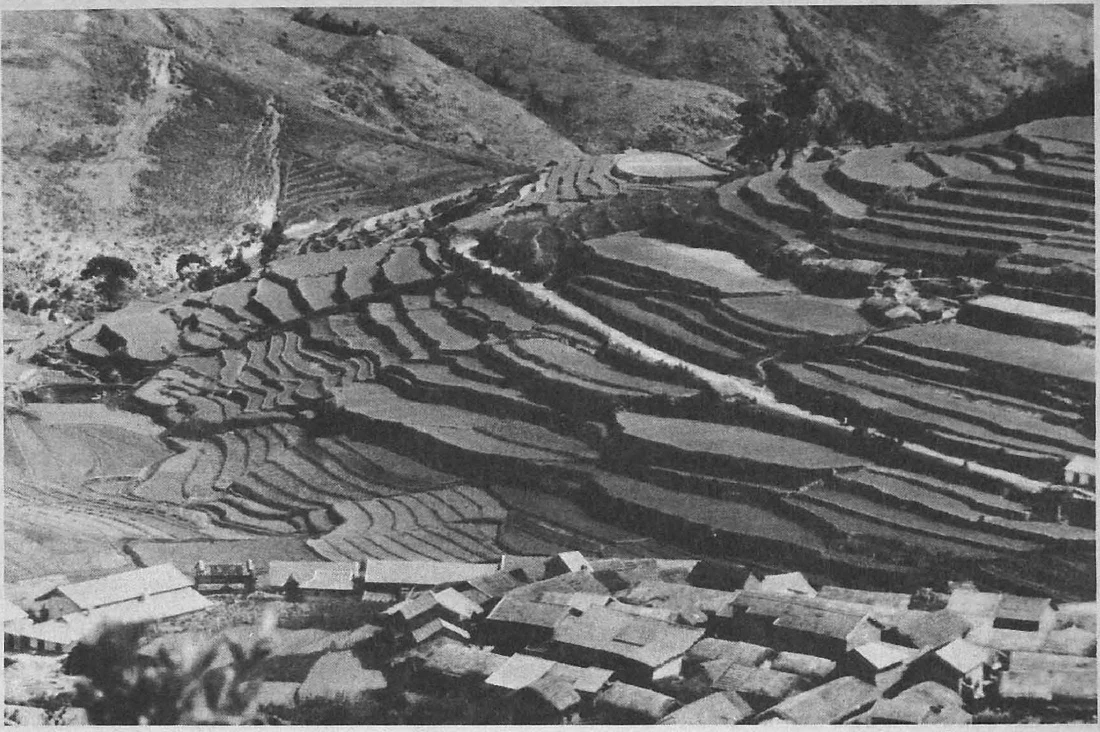

Fig. 42.--Terraced fields at Poombarai growing European-type vegetables for the hill-station at Kodaikanal.

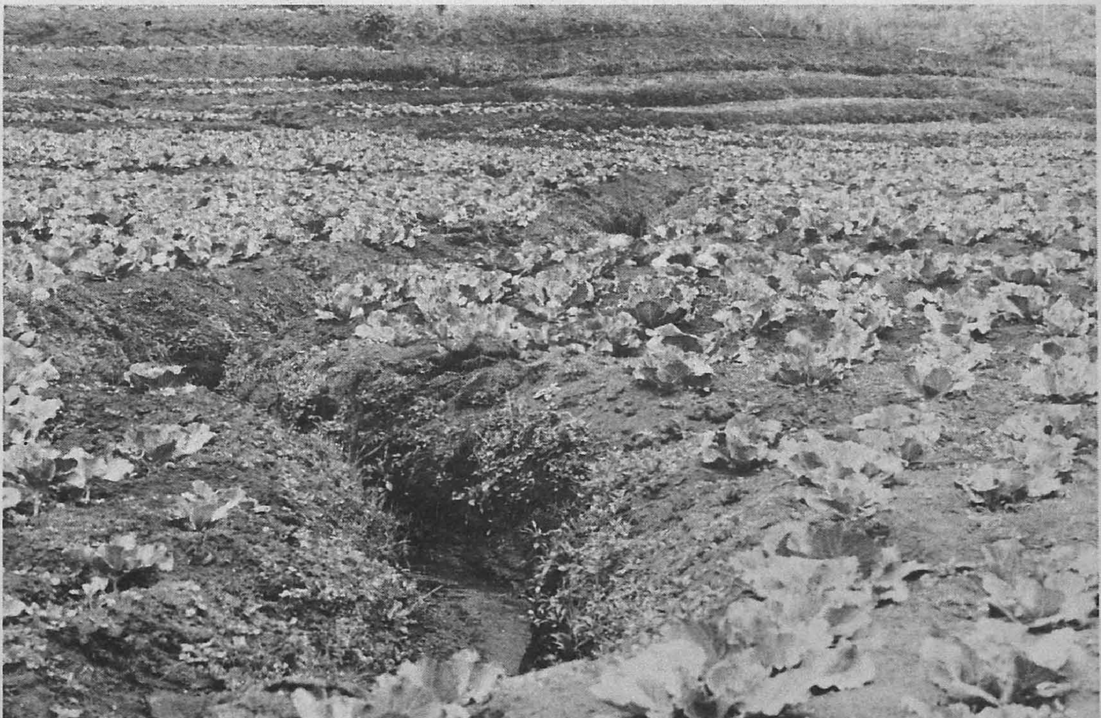

Fig. 43.--Young cabbages at Kukkal. Terraces are seen in the background. The flat land in the foreground was a swamp until the drainage ditch was dug.

times daily to pick up produce from points along the roadside (see Figs. 44 and 45). Otherwise farmers would need to bus all their produce into Kodaikanal. A full lorry load is from four to six tons, that is, between 80 and 120 sacks of potatoes.

Other Types of European Vegetables

Other types of European vegetables are grown under less concentrated and specialized conditions and organized by different sets of merchants, trucking companies, middlemen, and farmers. All fifteen of the local villages are in some way involved. Harvests for the different vegetables come throughout the year, varying somewhat in different localities. Though there is a distinct lull during the winter months, trucking is continuous with an average of 15 to 20 trucks per day. Mannavanur is again the largest exporter, sending an approximate two daily lorry loads; Kodaikanal and Poombarai each supply one and a half loads; Marionshola, Vandaravu, Poondi, Kavangi, Polur, Klavarai, Palangi, Naidupuram, Shembaganur, and Perumalmalai each one load; Kumbur and Vilpatti a half lorry-load each (for village locations refer to Figure 28). Though only eight miles away, Vellagavi is accessible only by an extremely steep footpath to Kodaikanal. It thus is unable to take part in any large-scale export system. Its villagers continue to carry headloads of fruits and vegetables directly to the compounds or the bazaar at Kodaikanal (see Fig. 40). As its altitude is comparatively low, its main produce is fruit, particularly bananas and oranges. No potatoes, but some lighter-weight vegetables are brought up.

Fruit

The fruit harvest is also prolonged throughout much of the year. Some plum varieties, peaches, and apricots are available already in April and are exported regularly from May to July. Apples ripen later, but they generally do not flourish on the Kodai Hills A type of good cooking apple has been cultivated particularly by the Roman Catholics at La Providence, but it would appear that apples thrive better under colder winter temperatures than those available in Kodaikanal. One sees eating apples in many southern city stores on the plains. These are not Kodai apples, however, but ones which have been shipped south from the Himalayas. Approximately two to three lorry loads of oranges and of bananas are also sent daily from Perumalmalai and Oothu down to Madurai.

By far the most important fruit grown in Kodaikanal is the pear. A hard green pear is the most popular variety as it is tasty and easy to transport, and no such fruit grows on the plains. The country pear, though extremely delicious to eat, is not often exported as when ripe it turns yellow and soft and bruises very easily. The main pear season is from July to November with a peak in September. During this peak month between 35 and 40 truck loads of pears go daily from Kodaikanal to cities on the plains.

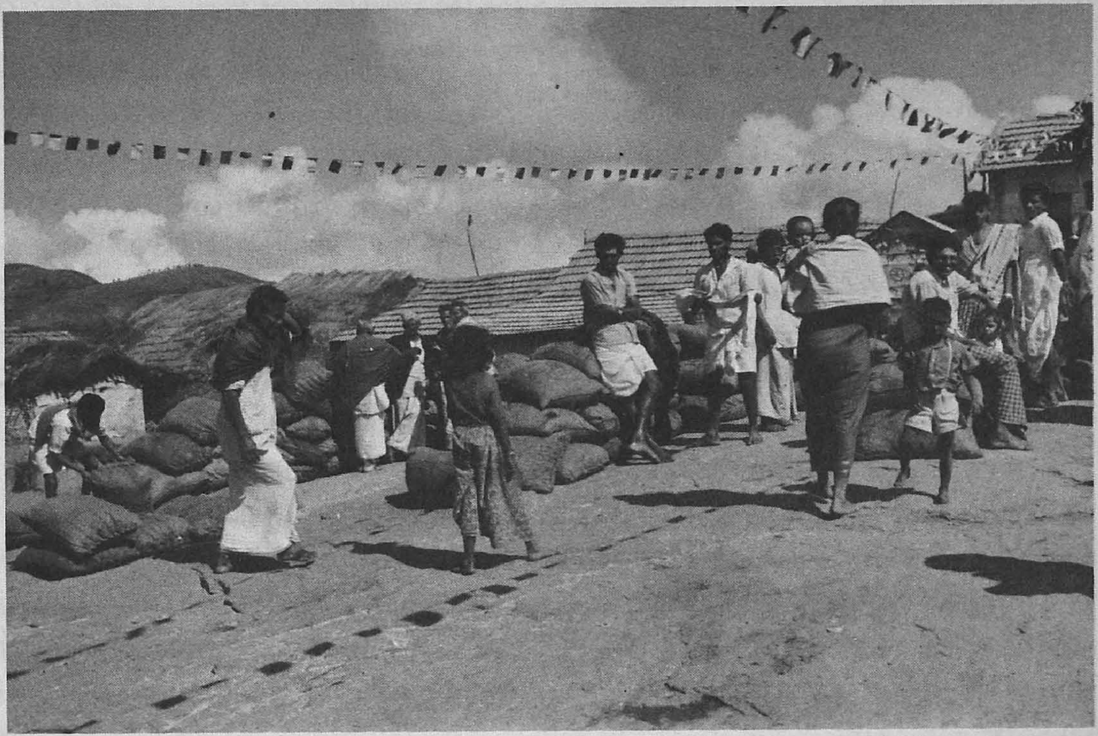

Fig. 44.--Sacks of potatoes awaiting the truck near Poombarai. They will pass through the hill-station at Kodaikanal and be distributed to cities on the plains.

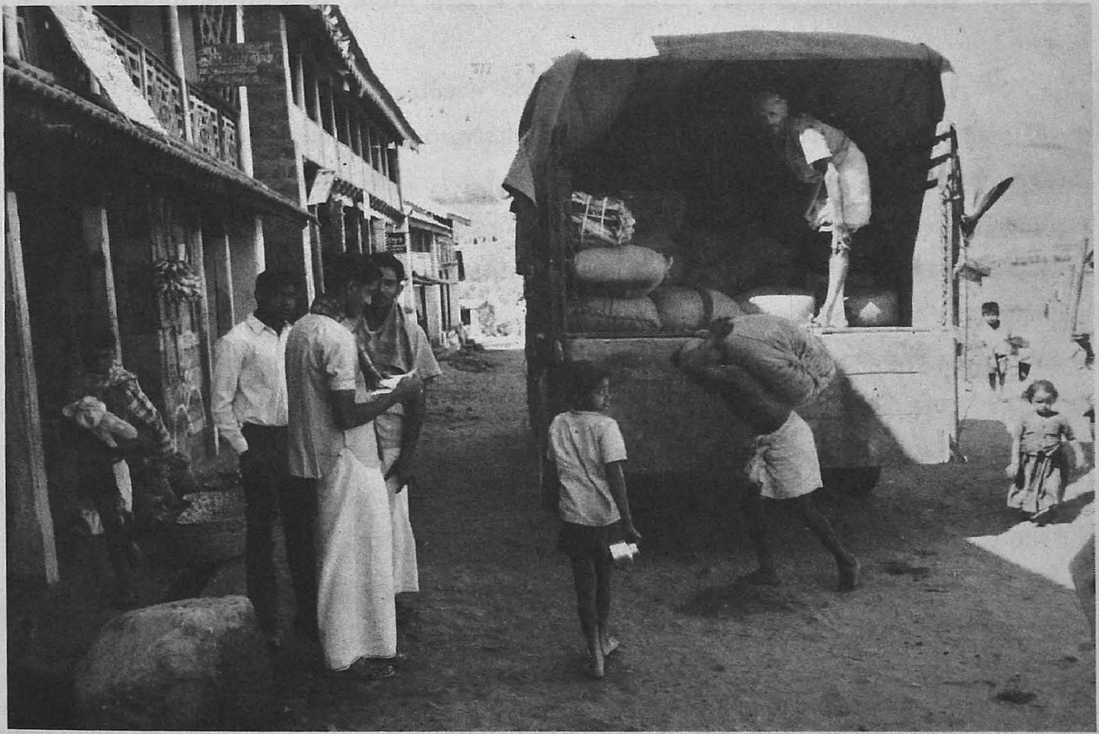

Fig. 45.--The truck arrives at Poombarai. It unloads rics and other commodities from the plains and picks up potatoes for distribution to the plains.

Distributing Organization

Although each type of produce is organized under different private auspices, the general procedure is similar in all instances. Regarding cultivation, there are two main types of systems. In the larger Kodai area, including Shembaganur, Naidupuram, and other districts which have a Kodaikanal postal address, there are seven large landowners, two of them Catholic establishments, the rest Indians of several castes and creeds. These land-owners employ coolie laborers and in some instances also skilled managers to cultivate the crops. The workers are normally paid once a week on a daily wage basis. In many instances, particularly in the more distant villages, but to some extent also in Kodaikanal itself, some plots of land are owned and farmed by small landholders themselves.

Kodaikanal town has approximately five leading permanent vegetable and seven fruit handlers. These represent the middlemen who travel around the hills bargaining with the landowners to contract their produce. They also make arrangements with the lorry transport agents for its collection, and with the fruit or vegetable dealers in various cities on the plains to decide prices and costs. Occasionally dealers in the cities organize their own lorries and make contracts directly with the landowners, but it would appear that basically most of the organization is done through Kodaikanal. The small landholders do not usually enter directly into these contracts. Instead they normally take their produce into Kodaikanal--using the bus transport system or ponies--and sell their smaller quantities at current market prices. From Kodai it is then either sold direct or included in a larger truck-load for export.

Eight trucking companies manoeuvre the winding ghat roads to collect Kodai's produce, and bring up to the hills the necessary basic commodities from the plains. Four of these companies have their headquarters in Madurai, two in Periyakulam, and two are located in Kodaikanal itself. They normally work through the dealers in Kodaikanal, even if they are sent by fruit and vegetable merchants on the plains. Kodaikanal is also the headquarters for trucks and truck-drivers while in the vicinity. It has the only automobile repair shops and petrol filling-station in the hills. Truck-drivers mostly arrive at night or in the early mornings, thus avoiding much of the seasonal hill traffic of people. They sleep and collect their produce from the roadsides during the day, and arrive back in the cities on the plains in the cool of the night. In this way the produce is as fresh as it can be for the early morning sale in the markets the following day.

Comparison with the Cameron Highlands

It is of interest to compare the fruit and vegetable growing and trucking system of the Kodaikanal vicinity with that which has grown around another hill-station area, the

Cameron Highlands of Malaysia.[1] The two have common factors in that both owe their development to the existence of the hill-station; land must be carefully terraced in both areas; and the produce of both includes European vegetables, the original seeds for which were imported from Great Britain. Their points of differences are, perhaps, greater than those of similarity. The physical background of the two areas is extremely different. The elevation of the Cameron Highlands is more like that of the Lower rather than the Upper Palnis and the climate is comparable to the lower, west-facing slopes of the Anaimalais. In the warm, damp conditions of the Cameron Highlands European fruit trees do not thrive. At this altitude in the Palnis and Nilgiris coffee, cinchona, plantains, and oranges are grown, not European vegetables, while in Himalayan valleys of similar altitude Indian, rather than European-type, vegetables are the chief marketed products.

There are also interesting differences in the methods of distribution of the hill-produce. In Malaya, the Chinese crop-growers left the hill-station when they could afford to start a small farm of their own. From the start, they made independent arrangements to send their goods to the plains. In the Upper Palnis the produce was specifically grown at villages already in existence for use at the hill-station. Thus the hill-station became, and has remained, the distributing center. Distances to the plains' cities are further, produce is collected from larger territories, and thus only non-perishable goods are exported. Although in Malaya the chief products include lettuce, spinach, and tomatoes, the varieties shipped from Kodaikanal are chiefly potatoes, carrots, root-crops, and beans.

Governmental Encouragement of Economic Activities

The Panchayat Union endeavors to encourage such economic development of the Upper Palni hills. In 1970 a proposal for a new road northwards to Palni was passed at a cost of approximately Rs. 75 lakhs, and work was commenced. To avoid the impassable scarp slopes, the road will not go directly through Vilpatti or Poombarai from Kodaikanal, but turn off from the Ghat Road at Perumalmalai and follow the coolie path from there through the Varadamanadi river system rather than the Kallar valley. The present 90 mile route will thus be shortened to 22 miles.

A further interesting development is the proposed fruit and vegetable canning factory for Battlagundu. Using the regular water supply available from the Palni Hills, metal imported via Madras, probably together with some from Kerala, fruit and vegetables from Kodai, and local cheap labor supplies, its location should ensure minimal production costs.

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[1] Though there is extensive cultivation connected with many Indian hill-station, pertinent geographical literature is limited, whereas in Malaya a comprehensive, recent study is available in: James D. Clarkson, The Cultural Ecology of a Chinese Village: Cameron Highlands, Malaysia, Research Paper No. 114 (Chicago: University of Chicago, Department of Geography, 1968).

Work was started on the factory building in 1970.

The government is also concerned about other types of economic activities. It has encouraged the development of sheep and cattle stations (see Chapter IV) and also of poultry farms. The Forestry Department has set up nurseries of Eucalyptus, wattle, and pine throughout the Upper Palnis, and reforestation has become a continuous process. An experimental plot of 275 acres has been planted in scented geraniums near Kukkal, and a total of 1,000 acres promised for their cultivation. The government wishes to install an oil extractor for this crop at Kodaikanal.[1] Menthol can also be grown profitably and the District Agricultural and Forest Officers have been asked to suggest ways of extending its cultivation.[2] Hill honey has always been a popular product in the plains. The government recently established a Regional Bee Research Institute at Thandigudi.

Mining surveys have led to the recent discovery of bauxite at Berijam. With an improved road system, mining may in future also play a role in the development of Kodaikanal.

Indian Perception of the Hill-Station

The British in the days of colonialism perceived the hill-station as a necessity to their physical welfare. Why do Indians today visit the hill-station? To gain a closer understanding of Indian perception of the hill-station, a questionnaire was prepared and distributed at random among visitors at Kodaikanal during the 1971 hill-season.

From the questionnaire it was possible to discover the categories of Indians who visit the hill-station, the main purpose of their visits, and the principal reasons for their choice of Kodaikanal.

Four major categories of visitors were discernible from the 429 completed questionnaire forms: professional, businessmen, agriculturalists, and students.[3] The professional group was the largest with 44 per cent of the total sample count. These included a range of civil service officials from ministers to office clerks, lawyers, medical practitioners, professors, teachers, school correspondents, pastors, inspectors, military officers, and trade union officials.

The business group was the second largest, 36 per cent of the total count. A very wide range of occupations was represented including merchants, traders, transport officials, bankers, chemists, workers in the film industry, tea brokers, automobile dealers, and a great variety of personnel from manufacturing industries in South and North India. Representatives at all levels of industry visited the hill-station: business owners, executives, engineers, salesmen, drivers, and factory hands.

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[1] Scented geranium is a valuable cash crop because of its capacity to earn foreign currency. It has been found to grow well on the Palni Hills.

[2] Barathi, Project Report, p. 31.

[3] Women who claimed they were housewives were not entered as a separate category, as most of them were associated through family connections with one of the above groups.

The third category, which was considerably smaller than the first two, was the student group. They represented 18 per cent of the total sampled visitors. The majority of them came from universities in Tamilnad, though Kerala, Mysore, and Bombay universities were also well represented.

The agriculturalists comprised the smallest category, the remaining 2 per cent of the total sample. Even in this small group a wide range of occupations was represented including landlords and plantation owners enjoying a holiday, as well as seasonal laborers who stayed with relatives and hoped to find employment during the hill-season.

Of the total sample, 70 per cent visited Kodaikanal regularly, most of them once a year during the season. Several had come for the past 20 to 40 years. They included visitors who stayed for a few days, as well as those who remained longer than one month. An unexpectedly large number visited the hill-station twice each year. These were chiefly people from Madurai, Coimbatore, and other nearby towns, and most of them had relatives in Kodai. Twelve per cent of the total sample visited Kodai seldom, but they had been at least once before. Many of them claimed they had chosen Kodai as it was less expensive than other hill-stations, both Ootacamund and the northern stations. Several expressed regret that they were unable to come more frequently. Eighteen per cent of the total were visiting Kodai for the first time. Of these a great many were enthusiastic and hoped to return.

All the questionnaire forms except five, claimed the main purpose of visiting the hill-station was for a holiday. Approximately 85 per cent of the visitors sampled were from cities of more than 250,000 people, and were in some way involved in the strains and stresses of modernizing conditions. Thus, people feel very strongly the need for relaxation from city life. Twenty-six per cent gave a second reason for visiting the hill-station. Of these the great majority claimed health and recuperation to be important factors. A few, including the five who did not visit the hill-station for holiday purposes, came for business. This included selling handicrafts and other plains' goods, preaching and youth camp organizations, seasonal work at hotels, and family business.

The reasons given for visiting Kodaikanal rather than some other place, very frequently encouraged a comparison of hill-stations. Many people gave answers similar to the following: "We have been to many hill-stations and Kodai is a nice health resort." "It is not as rainy as Ooty." "It is near to home, and a very fine health resort and hill place in India." "We have heard of the beauty of Kodaikanal and we wished to travel south." "I like the climate; it is quieter than other hill-stations." "Ooty is too commercial." "We choose Kodai for economic reasons." "My husband likes golf and the children go boating. The dry climate is much better than Ooty." "We heard it is a beautiful place and we have been to many other hill-stations." "Kodai is the best of all hill stations. It has a dry cold and is not so crowded, more rural." "It is good for health: Ooty is too chilly." "This is comparatively cheap." "There is more variety of things to do here." "Because it is heaven on earth."

The principal reasons given on the forms for the choice of Kodaikanal rather than other centers may be summarized in order of occurrence: (1) The beautiful mountains, forests, and green scenery; (2) The lake and boating opportunities; (3) The cool and comparatively dry weather at hill-season months; (4) The less crowded conditions compared to most other hill-stations and hence the greater opportunities for rest and relaxation; (5) The variety of its activities; (6) The possibility of spending a vacation at lower costs than at many other hill-stations; and, (7) The presence of relatives. In no instance was Kodaikanal compared to any other type of holiday resort, such as a coastal resort, for example. The people visiting Kodaikanal obviously assumed that a holiday in summer implied a vacation at a hill-station.

On the questionnaire people were also asked what they liked best at Kodai. Most of them stated their preferred activities. By far the greatest numbers of people enjoyed boating and visiting the scenic beauty spots, particularly the lakes and waterfalls, parks, and the views of the plains, more than everything else. Picnics, hikes, and boating are as popular as they ever were among the British in the colonial era. The overwhelming majority of visitors also appreciated Kodai's relative peace and tranquility. It was frequently referred to as "garden-like." However, some came to socialize. Answers included: "I like its friendly people," "I like meeting people and the activities," "Boating and making friends." There are, then, distinct signs that some social integration is taking place at the hill-station, which would not be possible under the more rigid conditions at home.

The cool climate of Kodaikanal played an extremely important role in the hill-station's popularity. Very occasionally the shock of the temperature differences was considerable. A visitor from the plains, unfortunately not spending long enough to become acclimatized, wrote: "We cannot explain the sight and natural beauty. Really it is beyond our imagination; but in this time the climate is too cool and we were too chilled." Generally, however, one is left with the impression that Indians today are as aware of the advantages of cooler weather, as were the British in their day.

Summary

Throughout this survey of the changing functions of the hill-station since Independence, it has become clear that the Indianization process has included a tremendous expansion program. Already in its colonial days Kodaikanal developed from a very small nucleus of seasonally occupied houses with a single function, to a town with a complex system of functions, each with its series of overlapping hinterlands. Since Independence, especially with improved transportation, this development has rapidly increased. It is apparent in all phases of hill-station life. The settlement has grown in size to approximately double its population at Independence. As well as the steady increase of pre-Independence purposes, such as homes for retired civil servants and residential schools, which show continuation, new trends exemplifying radical change have arisen, such as the use of properties by business groups. The hinterlands for its earlier functions have also expanded extensively since Independence with a growing proportion of Kodai's retired people arriving from the Bombay, Calcutta, and occasionally the Delhi areas. The expansion is even more apparent when one studies the increased range of hinterlands of the schools, now extending far beyond the shores of India. Seasonal activities have shown a similar trend towards expansion. The older clubs still carry on their earlier functions, but in addition is an awareness at government levels of the responsibilities towards the entertainment of its visitors, which led to the introduction of a Summer Festival program of far greater variety than any produced in colonial days. These new activities have involved a new background in which specialists from urban centers of the plains have been invited to perform. The political functions of the township and panchayat union have expanded considerably since their re-organizations after Independence, a factor which has probably played an important role in the development of significant reforestation programs and of the present agricultural economic functions. These latter represent a new type of hinterland, that of the modernized urban areas of Tamilnad. These widely divergent levels of function are radically changing the character of the hill-station, which increasingly portrays the characteristics of modernization.

CHAPTER VI

CONCLUSIONS

This study examines the rationale for the rise of tropical hill-stations in India, the factors in their location and distribution, and their evolution through time as exemplified in a case study of Kodaikanal, a hill-station at an elevation of 7,300 feet in the Palni Hills, an eastern extension of the Western Ghats in the State of Tamilnad in South India. Originally a colonial artifact, that is, a settlement form created by the British to mitigate the problems of adjusting to a tropical climate, tropical health problems, and life in a strange and distant land, the hill-station in India has persisted after Independence through Indianization with expansion of old roles, creation of new ones, and greater accessibility with the improvement of transportation. Indianization is part of the much larger process of modernization.

The Hill-Station as a Colonial Artifact

Health

The hill-station has been a part of an ancient and still unresolved debate regarding the suitability of tropical climates to middle-latitude peoples (Chapter II). The British in the mid-nineteenth century felt that the cool climate at the hill-station was an answer to the problem of their difficult adjustment to tropical life, and they regarded going to the hills for several months of the year as a necessary adjunct to their working in India. Even a peripheral probe into medical geography showed that in high-altitude hill-stations human beings were much less susceptible to almost all the typical tropical diseases endemic in India, and that in many stations people were entirely free of some of the worst tropical scourges of India, such as malaria and cholera. Individuals suffering from tropical fatigue, in particular, benefitted from the cool invigorating weather of the hill-stations and doubtless also from the rest, recuperation, and recreation of life in such stations.

The Foreign Social Exclave

The hill-station offered far more than mere physical relief to its European clientele. It created the opportunity for living, during part of the year at least, in the type of social atmosphere for which the British elite yearned; hence the importance of the social hierarchy demonstrated in a physical way at the Himalayan hill-stations such as Simla, and of the formal social entertainments and other types of Western amusements at Kodaikanal.

Hill-Station Distribution and Functions

Once the recuperative effects to both physical and social health at hill-stations had been discovered, great efforts were expended in their creation and development, particularly in the early years (Chapters III and IV). Several series of hill-stations evolved, first at high-altitude levels (between 6,000 and 7,500 feet) and later at almost any altitude above the surrounding plains. Through the perseverance of numerous individuals deciding to establish permanent summer homes in the hills, some stations developed concurrently, others in succession, in both the Himalayas and peninsular India, according to a set of locational factors noted in Chapter III. These included particularly: altitude, political restraints, scenic beauty, and accessibility.

Some of the stations remained single-purpose centers, such as army cantonments at strategic defence positions. Most developed into multi-functional hill-stations, some with government encouragement, others entirely through private enterprise, though the difficulties must at times have seemed insurmountable because of long journeys, lack of supplies, and landslides.

Already in the colonial era the hill-station was a constantly growing and changing type of settlement. The Kodaikanal case study (Chapter IV) showed considerable modification of functions between the primary and secondary stages as its local governmental services, and both permanent and seasonal activities expanded to include the additional needs of different types of visitors and residents, though it remained basically a European exclave.

The Impress of Indianization

The successful process of Indianization of the hill-stations of India involved expansion through continuity, expansion through economic diversification, and expansion through improved accessibility (Chapters IV and V).

Expansion through Continuity

The early participation of different types of Indians in the life of the hill-stations allowed a continuity of earlier hill-station functions after Independence. By the time of Independence Indians had become associated with all phases of hill-station activities. They had been chairmen and commissioners as well as council members of the municipality; had held executive positions in most of the seasonal clubs; were permanent residents as the elite, as well as shopkeepers and servants; owned properties which were used during seasonal vacations; and sent their children to English-medium hill-station schools. A minority they may have been, but a much involved one.

Continuity was also assisted by the fact that, unlike in Indonesia, Europeans were not expelled from India at Independence. As seen in Kodaikanal, no noticeable change occurred in the numbers of Europeans participating in hill-season activities during the years before and after Independence (Chapter V). Though many of the permanent British residents decided to leave for England, their numbers were more than replaced by new Europeans who began work in India, and who used the hill-stations as had their predecessors.

Furthermore, the hill-station habit was not rejected as an undesirable foreign custom of the British Raj, because by Independence it had probably become as important in the thinking of the Indian civil servant as of the British. The Indian governmental servant could rise in the social hierarchy to some extent regardless of his caste. If he became governor, he moved into the governor's house at the hill-station and he could enjoy the resultant prestige. The value of the hill-station to social status was not something from which the Indian had remained aloof.

Expansion through Economic Diversification

Originally primarily a sanatorium for sick British soldiers, the hill-station soon became a summer capital and recreational center for both European and Indian civil servants and army personnel. Earlier health and seasonal recreational objectives persisted, but the functions of hill-stations were expanded to include industry, commerce, and agriculture. Many hill-stations established textile factories, stone and cement works, film processing, or tea plantations, which utilized local supplies of raw materials or the cooler temperatures, and provided employment for an expanding population during off-season periods. Kodaikanal has recently become a collection and distribution center for agricultural products (Chapter V). European varieties of fruits and vegetables, introduced to the uplands by the British, have since become popular and are grown on a large scale for consumption in Indian cities of the plains. In the colonial era little came of early British notions of opening up the hills to large-scale livestock rearing or plantation agriculture (Chapter IV), but in the process of Indianization these alternatives to seasonal recreational activities developed. They guarantee the continuance of the hill-station in the future. Even in hill-stations where industrial or agricultural activities were already in existence in early years, there seems to have been considerable modification and expansion of this way of life in recent years.[1]

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[1] See for example the discussion of modification and expansion in the Nilgiris in: Steen Folke, "Evolution of Plantations, Migration, and Population Growth in Nilgiris and Coorg," Collected Papers: Denmark, Prepared for the 21st International Geographical Congress, India, 1968 (Copenhagen: Københavns Universitets Geografiske Institut, 1968) pp. 16-54.

Expansion through Improved Accessibility

Greater accessibility of the hill-station led to expanding hinterlands, different classes of visitors, and new movements, a repeating cycle which has accelerated with Indianization.

The principle of accessibility, always important with regard to hill-station distribution, was to a large extent relative. The early hill-stations were frequently accessible only on foot or on horseback, wives and children being carried up by coolies. Moving households under these conditions was costly and the hill-stations were available only to the wealthy. They had to be near at hand and therefore had a restricted hinterland.

Railroads and carriageways expanded the hinterlands. At the same time the resultant increased population required considerable changes in hill-station activities, as exemplified by the formation of clubs at Kodaikanal.

Recent transportation improvements have again accelerated the expansion of hinterlands. Buses opened the hill-stations to the middle-classes and facilitated migration of labor and short trippers. Trucks have encouraged widespread commercial activities. The establishment of a taxi service to the nearest airport has opened the hill-station to long-distant Indian elite.

The Forces of Modernization

Modernization in India is marked by a revolution in transportation, by increasing urbanization, and by greater social mobility. All three characteristics have been clearly evident at the hill-station during its course of Indianization, and the existence of the hill-station has encouraged their development. Thus the Indianization of the hill-station may be regarded as part of the larger process of modernization which is taking place, not only in India, but generally in underdeveloped lands. An understanding of the process at a hill-station level, gives an insight in a small way, and from a geographical perspective, of the forces of modernization.

Increase of Scale

The revolution in transportation at the hill-station has resulted in its easier accessibility and in an enlargement of scale associated with the expansion of its ranges of hinterlands. At Kodaikanal the tremendously expanded hinterlands of seasonal visitors, and also those connected with educational institutions are immediately evident by a comparison of Figures 37, 38, and 39, with Figure 33. The expansion is a two-fold one including distances from Kodaikanal, so that some hinterlands now extend even beyond the shores of India to East and Southwest Asia, East Africa, and Europe. It is also an expansion in quantity as well as extent. While a century ago visitors could be measured in tens, today's flow-lines must be expressed in thousands.

Other expanding hinterlands include those of the newly established commercial enterprises. Kodai's influence as a distribution center for fruit and vegetables reaches not only to the nearby cities of Madurai, Dindigul, and Coimbatore, but most recently as far as Madras. Such activities were greatly enhanced by the establishment of long-distance telephone communications.

An investigation of the origins of Kodai's permanent residents, would show a constantly increasing proportion who were once natives of distant places such as Bombay, Calcutta, and North Indian cities.

Although some of these expanding hinterlands are the result of a steady growth from the creation of the hill-station, some are very recent, while others show a faster rate of increase since Independence, as physical mobility has accelerated through an improved transportation system. At Kodaikanal there was a distinct spurt in the growth of the center and in the numbers of seasonal visitors after the southern extension of the railroad system in 1875, and another with the arrival of vehicular road traffic and the completion of Laws Ghat Road in 1916. Improved accessibility is, however, much more clearly apparent since Independence. The number of highways leading to Kodaikanal will shortly have doubled. The number of private cars has increased greatly. The pre-Independence single bus system, scheduled to meet the trains at Kodai Road and Madurai, has been reinforced by three others: a local bus system linking villages of the Upper Palni Hills, buses from neighboring villages on the plains direct to Kodaikanal, and a state express bus service from Tiruchirapalli and Tuticorin to Kodaikanal.

Urbanization

Increasing urbanization in India has resulted in the spread of literacy, which, in turn, enhanced "media exposure," and led to wider economic participation (per capita income) and political participation (voting).[1] All these phases are evident at, and were encouraged by the hill-station, which already in colonial times was an urban-type foreign social exclave. Since Independence, however, such urbanization trends have accelerated considerably. At Kodaikanal Tamil schools for local inhabitants, originated by foreign missions, have been accepted as government municipality responsibilities, while private English-medium schools offering appropriate courses for Indian students show rapid post-Independence expansion with ever-increasing hinterlands. The municipality public address system is regularly used to encourage widespread political participation, and the early start in co-operative stores has, since Independence, developed to include a banking system and the supply of all basic necessities of food, clothing, and agricultural supplies.

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[1] Srinivas, Social Change, p. 50.

The hill-station has recently portrayed unique evidences of urbanization. It is estimated from surveys at Kodaikanal that approximately 85 per cent of the total seasonal visitors come from cities not rural areas, as also do the great majority of the retiring elite. The expanding economic hinterland for specialized agricultural produce of the adjacent upland villages, distributed through Kodaikanal, is entirely urban. An increasing proportion of seasonal activities at the hill-station involve professional performers imported from cities of Tamilnad and Kerala (Chapter V).

Mobility

Modernization in India also implies mobility. British government officials in their day perceived the hill-station to be a necessary type of settlement for their well-being in India. Today, an ever-increasing number of Indians perceive it as a useful vacation center. Not only does a small group of Indian elite take advantage of long-term residence in the hills, but as seen at Kodaikanal, many thousands of economically middle-class, predominantly urban visitors, spend short holidays at the hill-station. Kodaikanal has also become a popular site for tourist excursions that remain in the town for a single day only. The hill-station is being used by the Indian urbanites, who are becoming increasingly involved in the pressures and frustrations of a modernizing society, for both the change of air and the change of pace offered at the hill-station.

Mobility at the hill-station has also included social integration. The hill-station model in its early years (as seen in Figure 2:A), showed flows in only one direction--uphill into the European compounds at the hill-stations. This one-way flow was an expression of cultural dualism imposed on the existing Indian system, with one group being served by another.[1] Slowly at first, but with considerable acceleration since Independence, a two-way flow developed with products and services going in each direction. This two-way physical and economic movement represents a diminution of the former dualism. It is taking place within an organized regional and national culture which is integrating the hill-station into an indigenous social system.

In this work an effort has been made to point out the significance of the hill-station in India. Though little studied by geographers, the Indian hill-station is a unique and important settlement feature, which is serving a rapidly growing Indian clientele as a seasonal recreation resort, and is increasingly able to utilize those resources which result from temperate climatic conditions of high altitude and are, therefore, normally unavailable in tropical India. The hill-station developed as a colonial exclave according to the perceived needs of the British in India. This study has indicated how in post-Independence years it has evolved as an integral part of the Indian ecosystem, and it has delimited the extent to which earlier British perceptions have now become Indian perceptions. The forces of modernization, and in particular of Indianization, have heightened the role of the Indian hill-station.

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[1] The hill-station in this way portrays characteristics typical of many oriental cities. For reviews of literature on Indian cities which include this aspect of dualism see: Rhoads Murphey, "Asian Cities," Geographical Review, XLVII, No. 4 (1967), 587-89; and Norton S. Ginsburg, "Urban Geography and 'Non-Western' Areas," in Philip M. Hauser and Leo F. Schnore, The Study of Urbanization (New York: John Wiley & Sons, Inc., 1965), pp. 311-46.

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